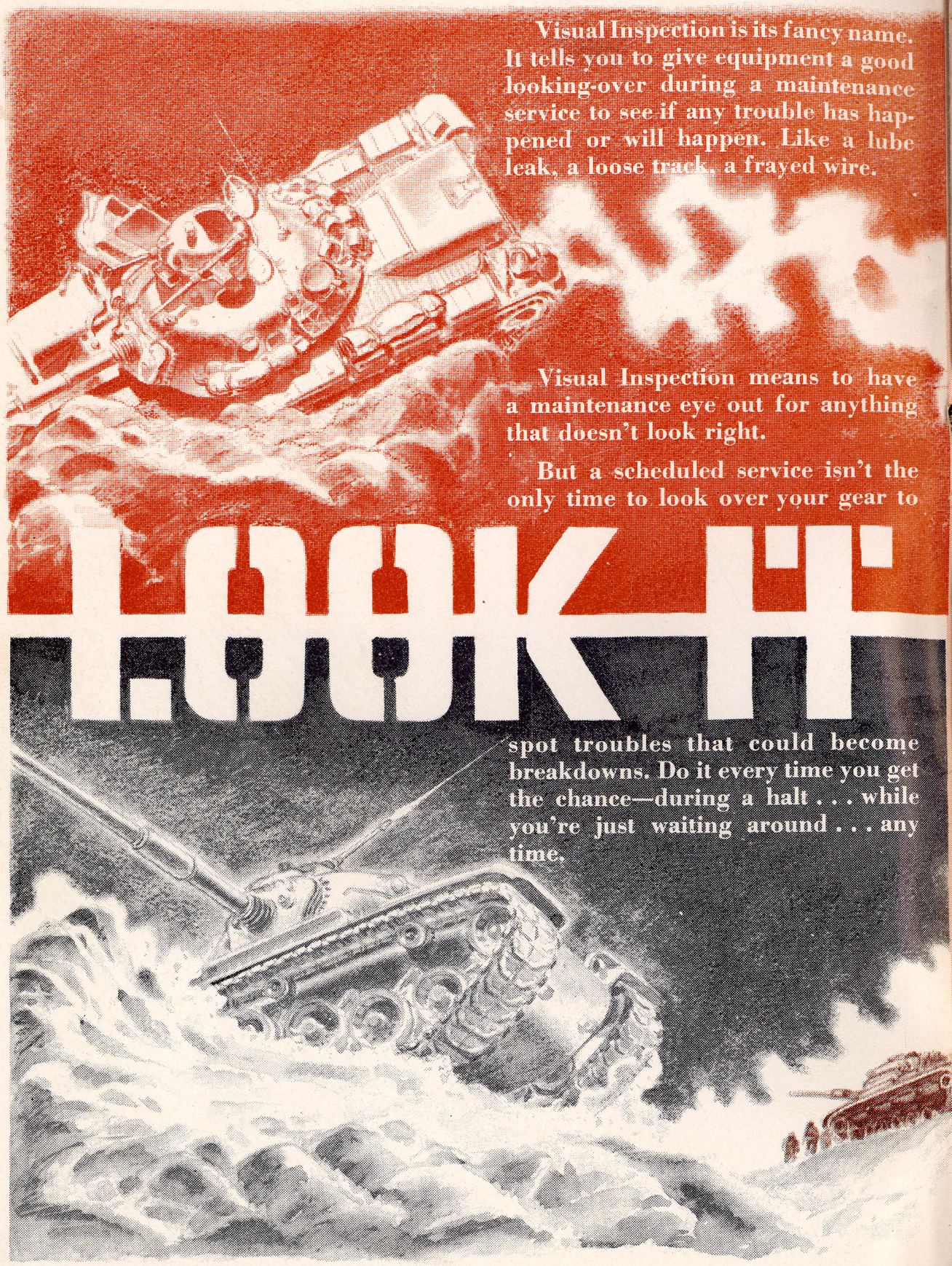
Issue 114
PS
1962 Series
THE PREVENTIVE MAINTENANCE MONTHLY
SPECIAL FEATURE
FOLLOW YOUR NOSE ON ELECTRONIC ITEMS
SEE PAGE 29


Visual Inspection is its fancy name. It tells you to give equipment a good looking-over during a maintenance service to see if any trouble has happened or will happen. Like a lube leak, a loose track, a frayed wire.
Visual Inspection means to have a maintenance eye out for anything that doesn't look right.
But a scheduled service isn't the only time to look over your gear to
LOOK IT
spot troubles that could become breakdowns. Do it every time you get the chance—during a halt . . . while you're just waiting around . . . any time.

PS THE PREVENTIVE MAINTENANCE MONTHLY

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Published by the Department of the Army for the information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limits of availability, older issues may be obtained direct from PS Magazine, Raritan Arsenal, Metuchen, New Jersey.

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PS wants your ideas and contributions, and is glad to answer your questions. Names and addresses are kept in confidence. Just write to:

Sgt Half-Mast,
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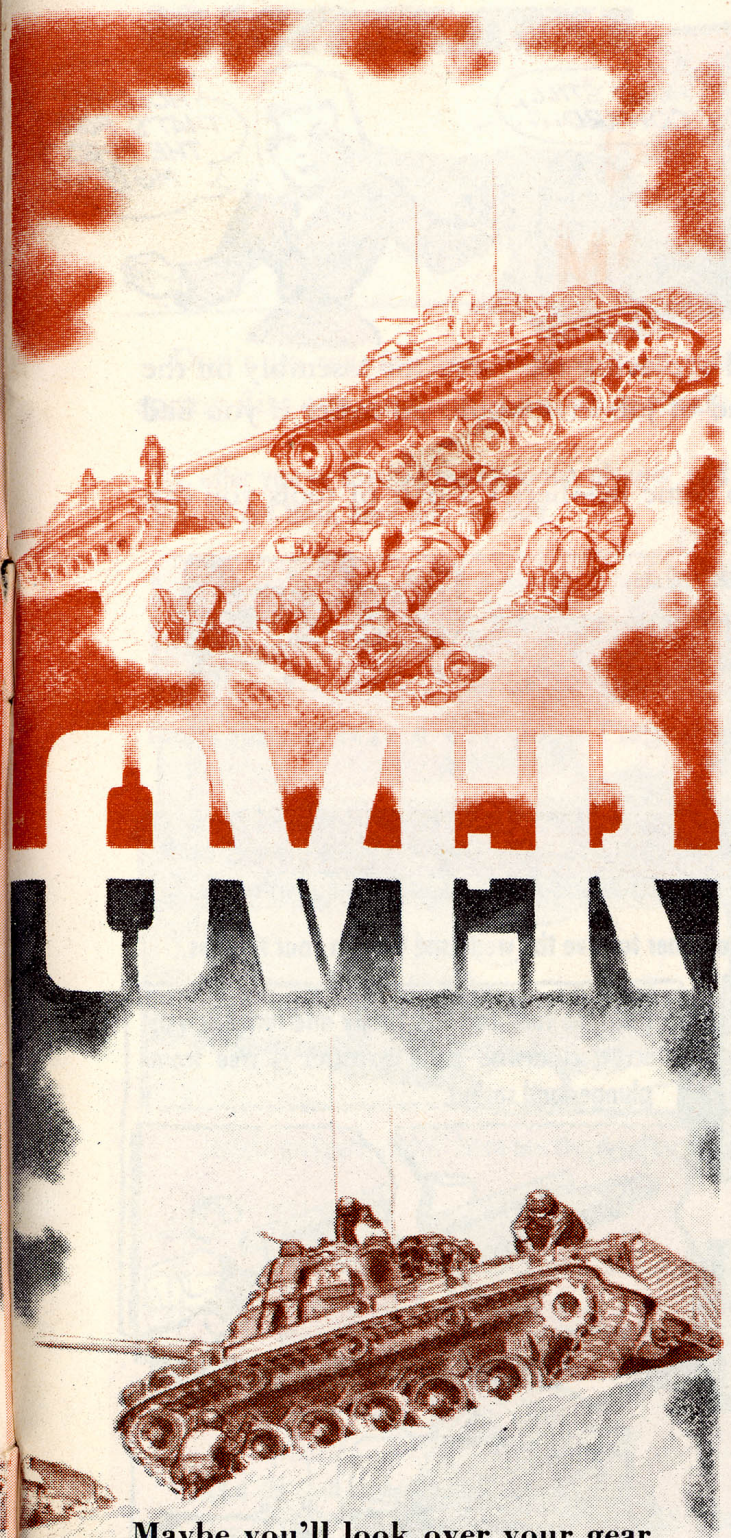

Maybe you'll look over your gear ninety-nine times instead of taking ten, and it won't do a bit of good. But that hundredth time could spell the difference between just going out . . . or going out and coming back.

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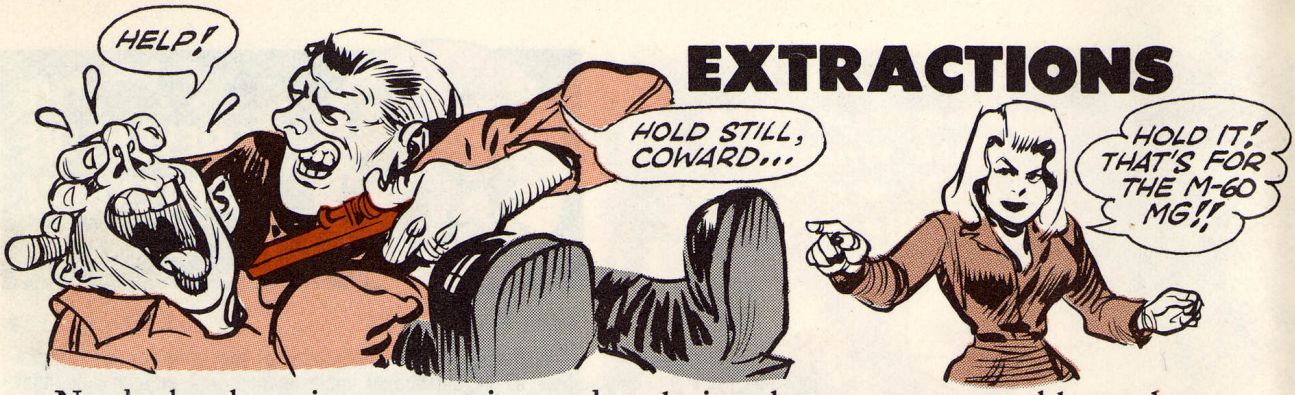
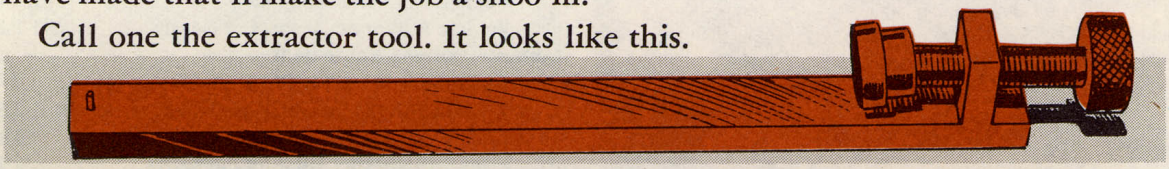


EXTRACTIONS

No doubt about it . . . removing and replacing the extractor assembly on the bolt of the M60 machine gun is the kind of job that would go easier if you had an extra set of thumbs.

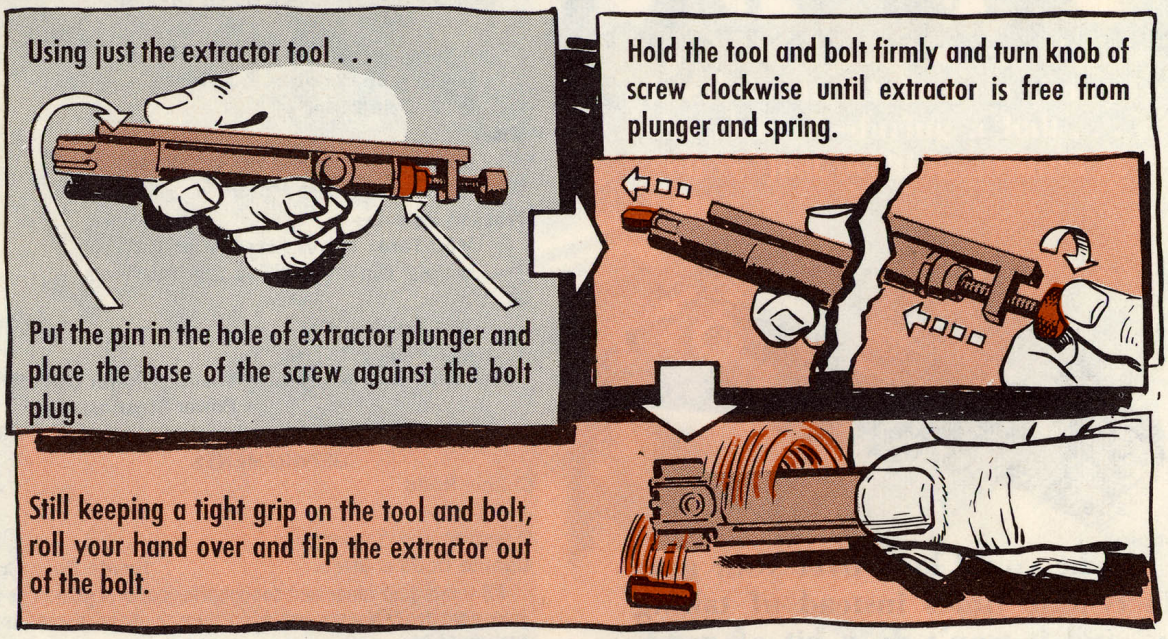
Surplus thumbs being kinda hard to come by—here's a pair of tools you can have made that'll make the job a shoo-in.

Call one the extractor tool. It looks like this.



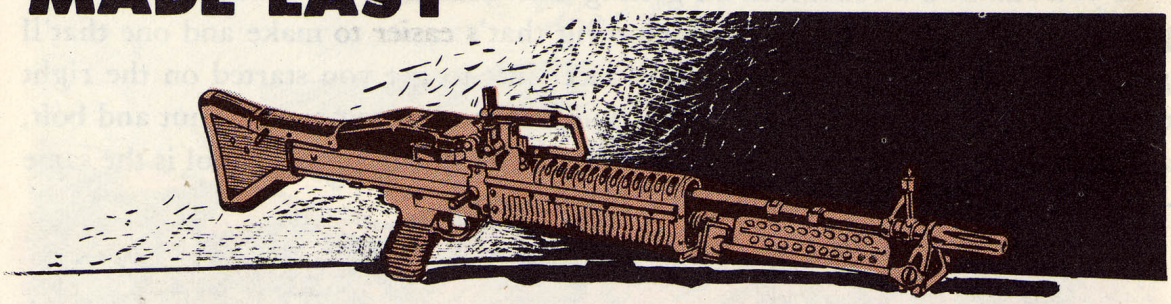
Tag the other one the SP (spring-plunger) tool. It's a real simple deal and looks like so.

Now . . . here's a picture-story of how they work together to save the wear and tear on your thumbs.



To release the spring and plunger, make sure the open end of the bolt is held tight against a table or desk. Then turn the tool knob counter-clockwise until spring snaps out.

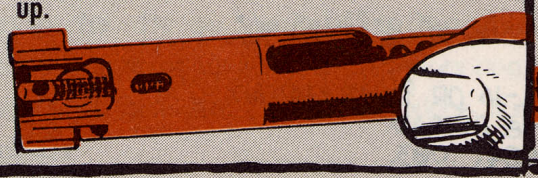
MADE EASY



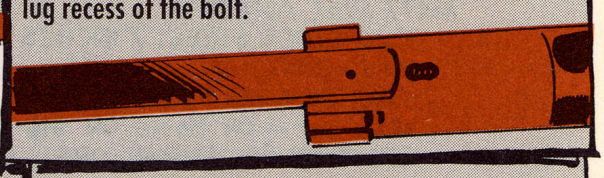
Don't go waving the bolt around while releasing tension on the spring—the spring flies out, and could hurt somebody.

OK, after you've checked the extractor, plunger and spring—and replaced them as needed—here's how to get them back into the bolt.

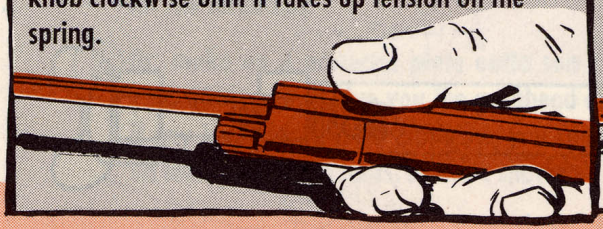
Place spring in slot and put pin of plunger in the spring with the hole in the plunger facing up.



Put lip of SP tool, pin down, in bottom cut of plunger and press in until pin seats in extractor lug recess of the bolt.

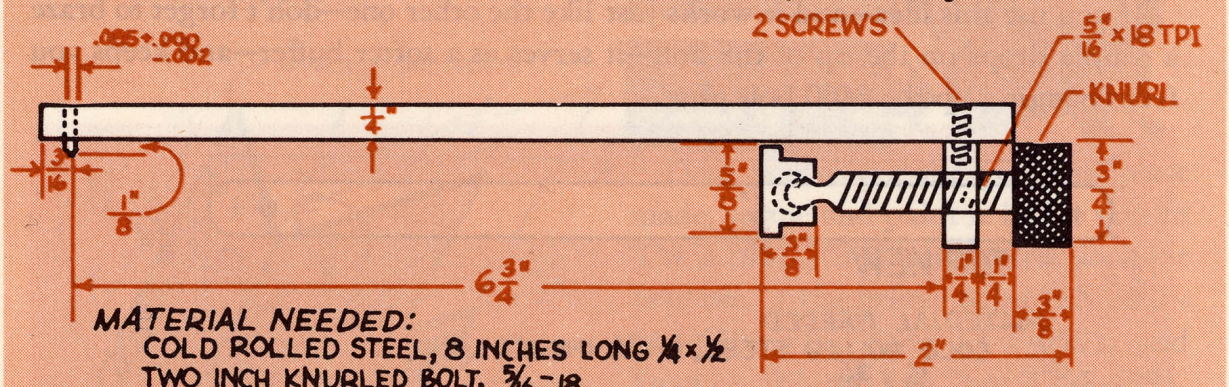


Now, reposition the extractor tool and turn knob clockwise until it takes up tension on the spring.



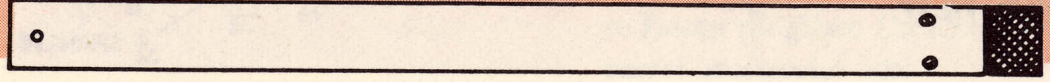
Hold extractor tool and bolt firmly, remove SP tool, replace extractor—front end first—turn knob counter-clockwise to release spring tension and remove tool.

Handy gadgets, right? Here are the drawings and a list of items you'll need to get the tools made:



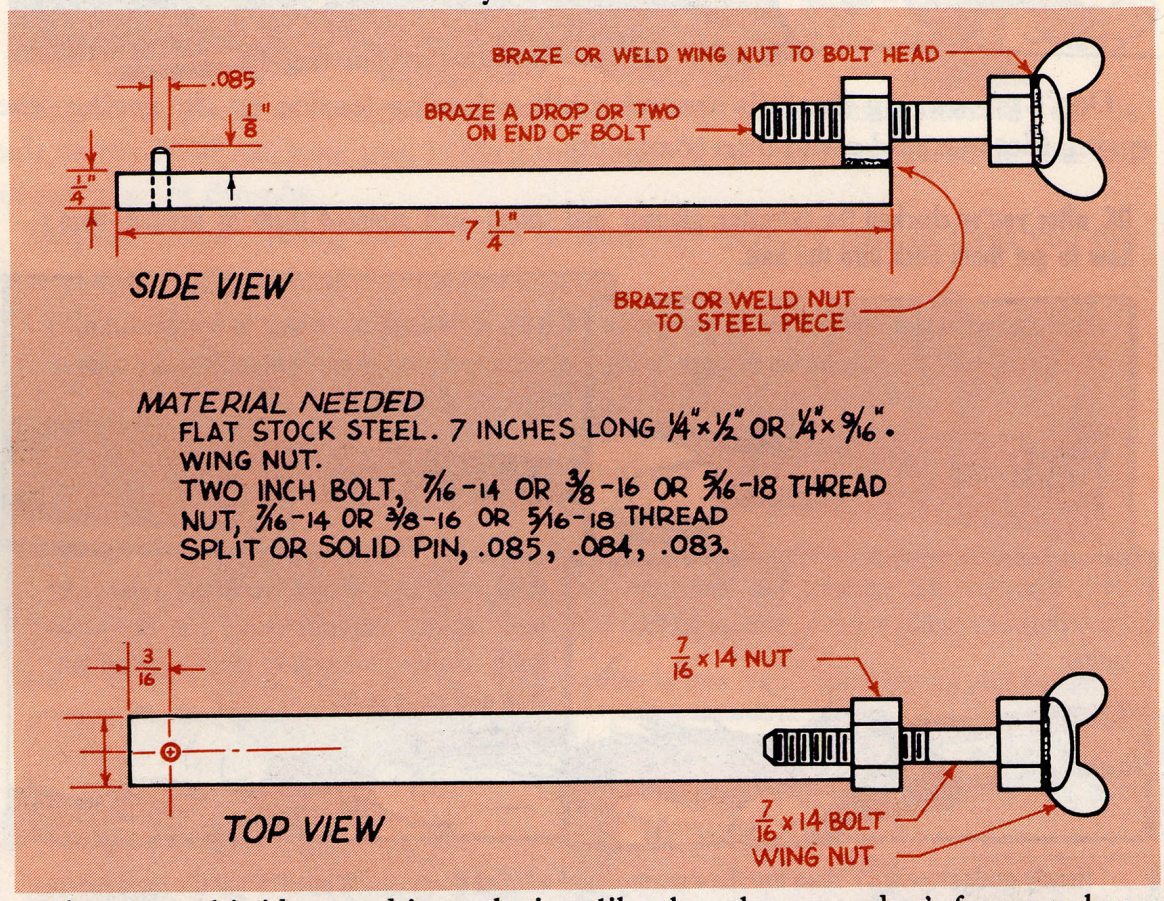
MATERIAL NEEDED:

COLD ROLLED STEEL, 8 INCHES LONG ¼ x ½
TWO INCH KNURLED BOLT, 5/16 - 18
SWIVEL CUP 5/8 x 3/8
SPLIT OR SOLID PIN, .085, .084, .083
TWO MACHINE SCREWS, FLT. HD,
SIZE 6-32, NF x ½

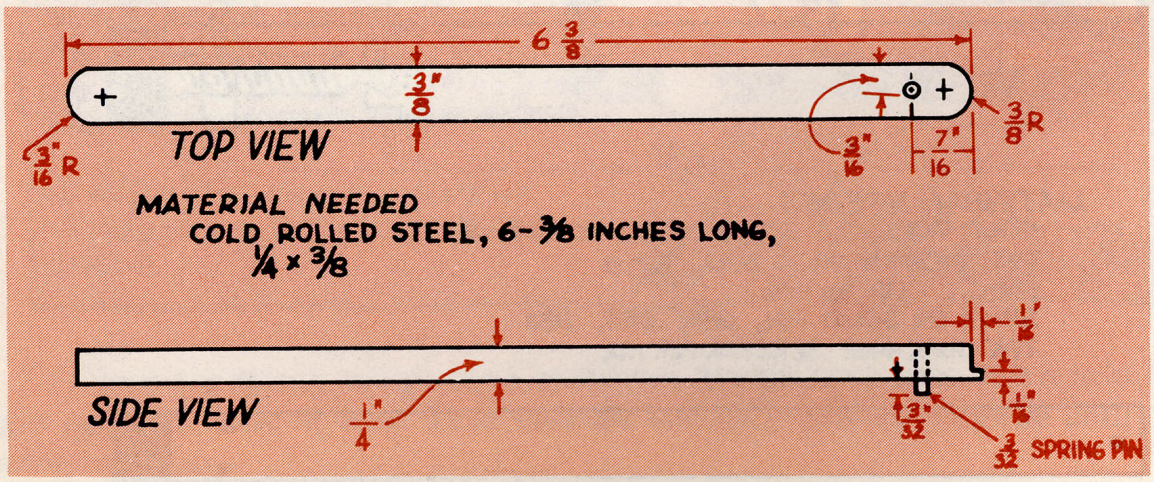


PS MORE

If you run into a roadblock on getting this extractor tool made, you can improvise and come up with an extractor rig that's easier to make and one that'll get the job done just as well. F'rinstance, just to get you started on the right road, here's what can be done with a hunk of steel, a common 7/16 nut and bolt, a wing nut and a little brazing and welding. The spring-plunger tool is the same —no matter which extractor tool you have made.



If you use this idea—and it works just like the other one—don't forget to braze a coupla drops on the tip of the bolt—it serves as a softer buffer—and keeps you from banging up the M60 bolt plug.



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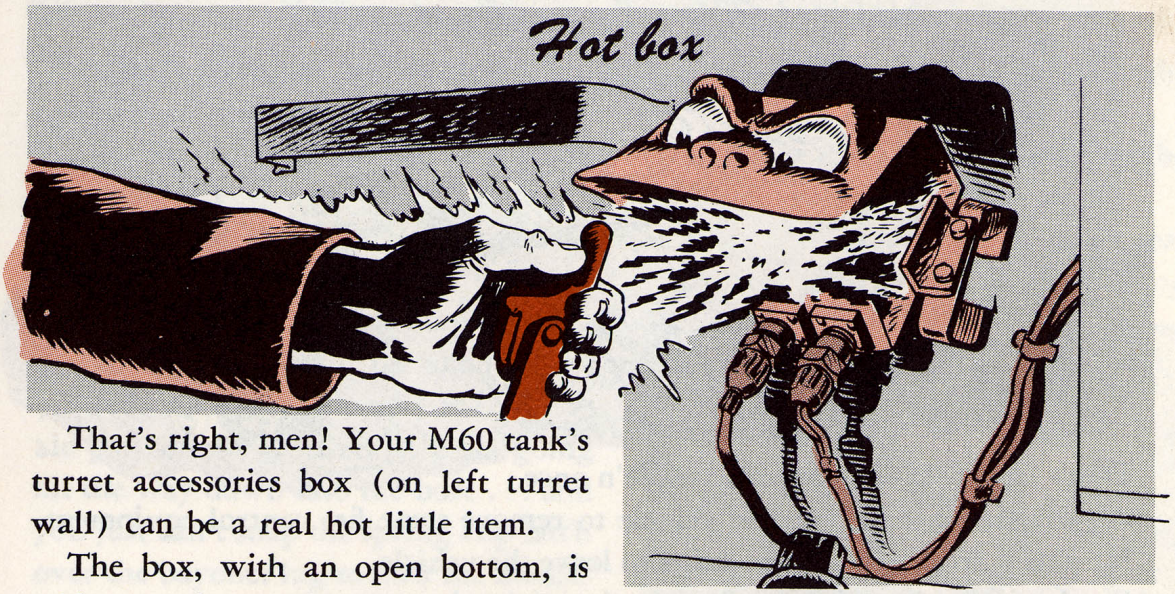


That's right, men! Your M60 tank's turret accessories box (on left turret wall) can be a real hot little item.

The box, with an open bottom, is wide open for troubles if the clamping device handle on your 105 mm ammo racks is swung upward and makes contact with the hot circuit breaker terminals.

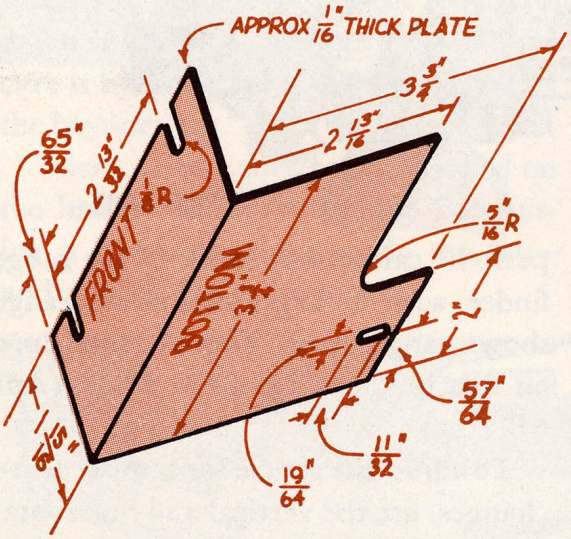
The arc can start the sparks to fly and anything can happen.

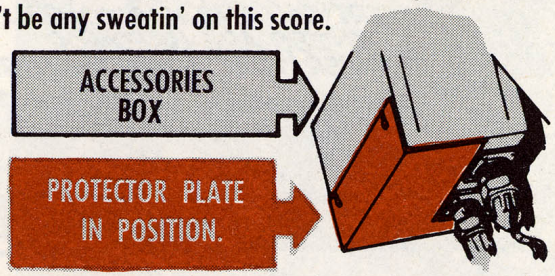
Here're a coupla things you can do—now—to protect you and your vehicle from any possible disaster.

1. Insulate the handles with tape (examine 'em once in a while) in the area where they'd hit the terminals.

2. Or, make up a protector plate outta some scrap metal (approx 1/16-in thick). Course your CO'll have to give you the go-ahead on the plate. Use the existing screws so that if any inspector takes a dim view, you can remove the plate. The same plate is going on later production units, so there shouldn't be any sweatin' on this score.

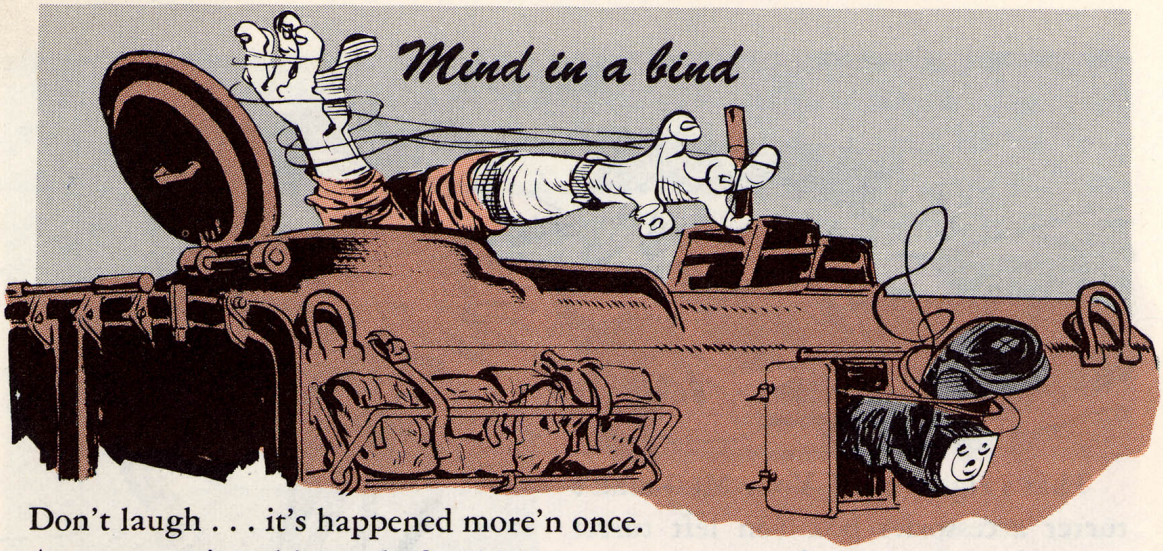
PROTECTOR PLATE





Once you've got the protector plate made, prime and paint it like it says in TM 9-2851 ("Painting instructions for field use.") Use primer paint FSN 8010-664-6302 (Fed Spec TT-P-659), and Enamel, White (Fed Spec TT-E-489), color code number 17875; FSN 8010-298-2286 gets you a 1-qt. can.

Remember, just use existing screws to fasten the plate (bracket) onto your turret accessories box.



Don't laugh . . . it's happened more'n once.

A guy goes into his tracked vehicle to remove some fire control equipment.

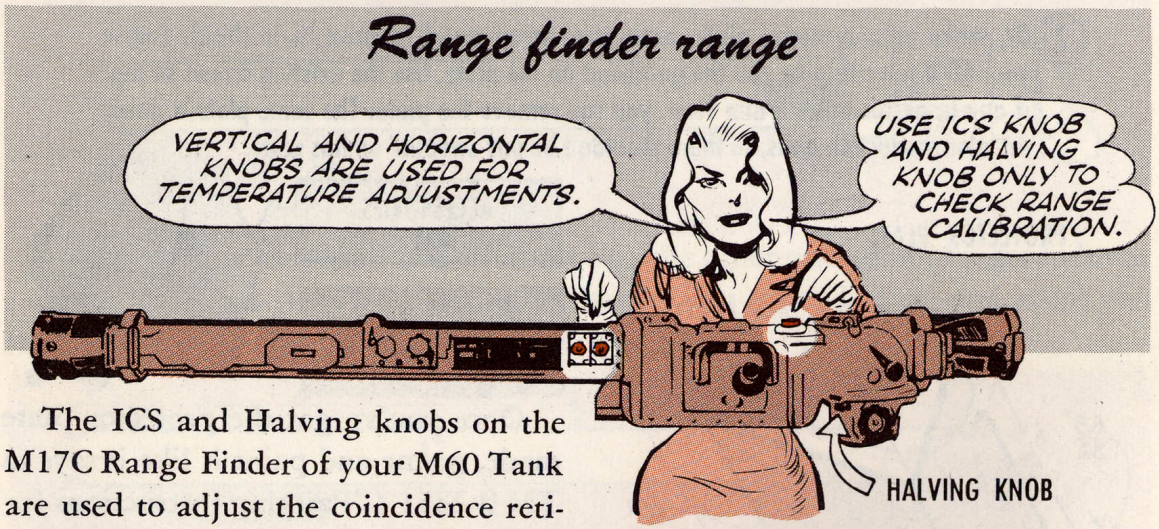
He gets it free . . . and then starts to leave the vehicle.

But he finds himself tangled up in the wiring harness.

He's in sad shape—not being able to move up, down or sideways. And there's no place to put the fire control equipment so he can free himself.

The only thing left to do is yell for help . . . and hope somebody gets the word before any damage is done.

To stay out of a jam like this, disconnect any wiring that might get in your way when removing fire control equipment . . . especially in close quarters.



The ICS and Halving knobs on the M17C Range Finder of your M60 Tank are used to adjust the coincidence reticle like it says on pages 71 to 73 of TM 9-2350-215-10 (Jun 60). After you get the reticle adjusted, the red shields are locked into place over the two knobs to remind everybody KYCPHOI—Keep Your Cotton Pickin' Hands Off It—until your reticle has to be adjusted again.

You adjust the reticle whenever your periodic calibration check of the range finder with a target of known range shows range error. There's more dope on that in para 223 of FM 17-12 (Apr 61).

To adjust the reticle for **temperature** changes, use the vertical and horizontal knobs only.

Slow down—shoulders ahead

Nope . . . not the soft willowy kind that make life worth living—but the raised ones that spell all kinds of trouble.

Like the shoulder in the bore of some of the first-built flash suppressors on the M14 rifle.

The raised shoulder doesn't mean a thing as long as you're throwing real lead. But if you've gotta use the M12 blank firing attachment during training —you've got troubles with a capital T.

Troubles, because the shoulder is just enough to keep the tube on the muzzle part of the attachment from going all the way down into the bore . . . and you just can't snap the spring clip latch over the bayonet lug to lock the attachment in place.

Spare the sledge hammer. It won't work.

Besides—there're two easier, no-sweat ways out.

Either your CO can set up a gun swap within your outfit, so you come out with an M14 that has the latest type flash supressor.

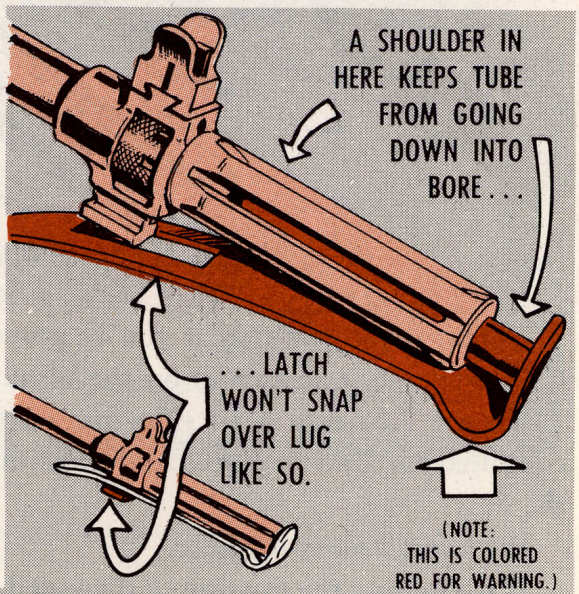
Or he can turn your rifle into your Ordnance support people for a little painless surgery on the shoulder that'll put you back in the blank firing business with a bang.

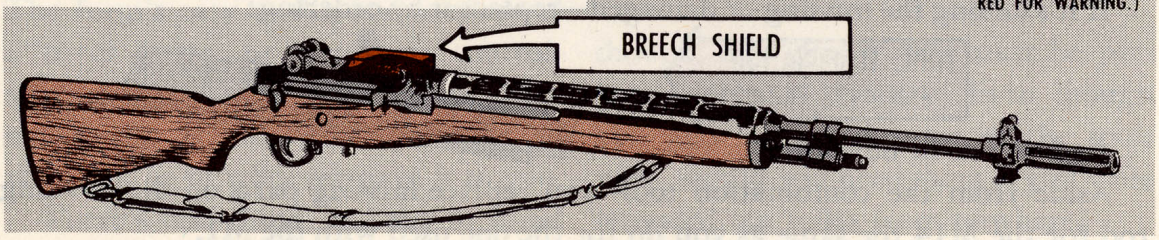
Of course, if you don't have shoulder problems, using the M12 blank firing attachment's a cinch.

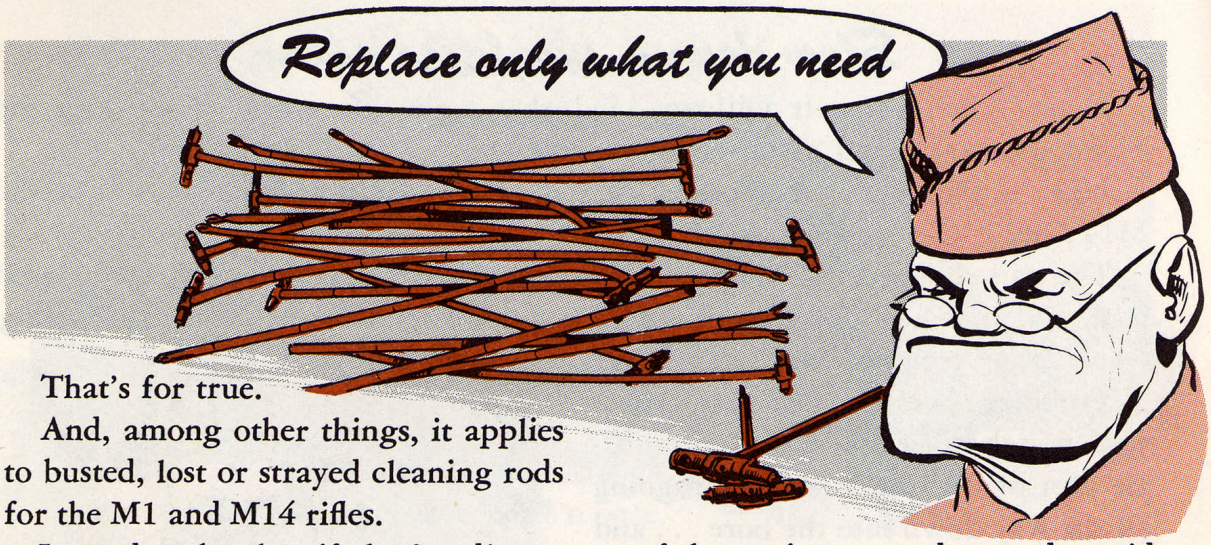
Like TM 9-1005-223-12 spells out—it's a snap.

All you gotta do is put the tube part down into the flash suppressor and secure it by snapping the spring clip over the bayonet lug.

Then . . . make sure you've hooked on the breech shield around the bolt—using a blank cartridge to do the job—and you've got it knocked.







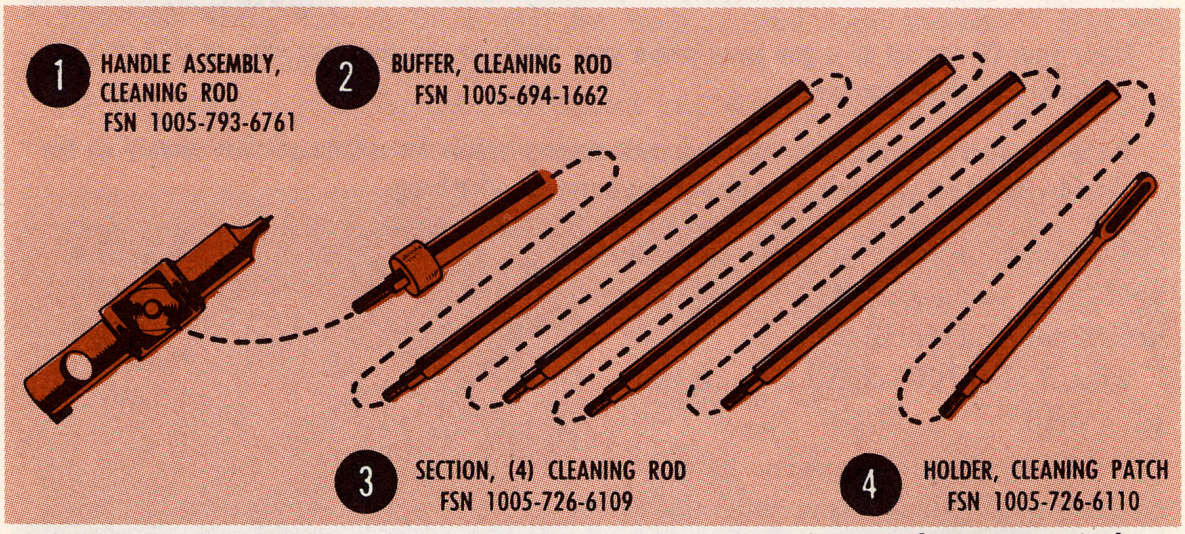
That's for true.

And, among other things, it applies to busted, lost or strayed cleaning rods for the M1 and M14 rifles.

It used to be that if the handle, or one of the sections, was damaged, you'd have to requisition the entire cleaning rod to replace the one bad part.

Not so anymore. Now you have a choice.

If you've got an M1—you can get either the entire rod, or any part of it by using one, or all, of the following FSN's.



Natch, it follows that if you've gotta replace the whole rod you use all four FSN's—if only one part is on the blink, requisition only that part.

On the 7.62-mm M14 rifle—the only thing you have to remember is that the combination tool replaces the cleaning rod handle assembly that came with the M1.

But there's no sweat here.

If it's among the missing or damaged—replace it by ordering:

TOOL, COMBINATION
FSN 4933-768-0211

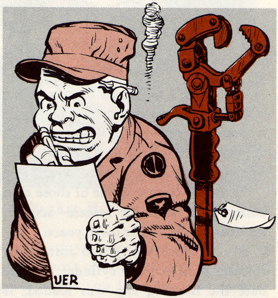
And you're in business.

Aside from the combination tool—you replace missing parts on the cleaning rod for the M14 the same as you do for the one used with the M1.

Tip on tools

Some outfits have been complaining they get tools not on their TOE, tools they didn't ask for, don't need, or don't know what they're for.

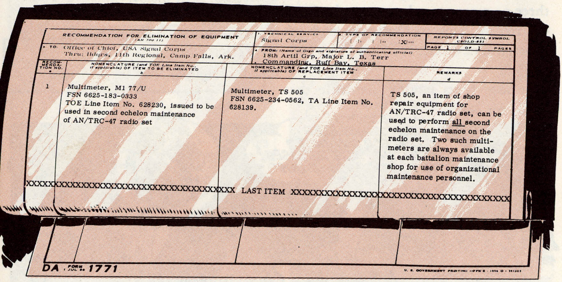
If that's your problem, do yourself and everybody else a big fat favor: Ask . . . find out what's going on. Your support unit will have the answer.



If they're not yours, turn them in. They're just extra baggage for you, and besides, some outfit across the way may be hurting for 'em.

Another thing—if some troublesome tools happen to be in sets your unit is supposed to have, let the supplying tech service know what you're thinking and troubles you're having. Use a UER (DA Form 468).

And if some of the authorized components of your tool sets are no longer needed make out a DA Form 1771 (Recommendation for Elimination of Equipment) as it's spelled out in AR 700-11.



RECOMMENDATION FOR ELIMINATION OF EQUIPMENT (AR 700-11)

1. TECHNICAL SERVICE: Signal Corps

2. TYPE OF RECOMMENDATION: [ ] I [ ] II [X] III

REPORTS CONTROL SYMBOL CSOLD-851

PAGE 1 OF 1 PAGES

3. TO: Office of Chief, USA Signal Corps
Thru: Hdqrs, 11th Regional, Camp Falls, Ark.

4. FROM: (Name of Orgn and signature of authenticating official)
18th Artil Grp, Major L. B. Terr
Commanding, Ruff Bay, Texas

RECOMMENDATION NO. a	NOMENCLATURE (and TOE Line Item No., if applicable) OF ITEM TO BE ELIMINATED b	NOMENCLATURE (and TOE Line Item No., if applicable) OF REPLACEMENT ITEM c	REMARKS d
1	Multimeter, M1 77/U FSN 6625-183-0333 TOE Line Item No. 628230, issued to be used in second echelon maintenance of AN/TRC-47 radio set	Multimeter, TS 505 FSN 6625-234-0562, TA Line Item No. 628139.	TS 505, an item of shop repair equipment for AN/TRC-47 radio set, can be used to perform all second echelon maintenance on the radio set. Two such multimeters are always available at each battalion maintenance shop for use of organizational maintenance personnel.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX LAST ITEM XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

DA FORM 1771

The form's easy to fill, it doesn't need a cover letter, or a reports control-symbol, and you send it through channels to the tech service responsible for the item, or to whoever gave it to you.

There's one thing to keep in mind though, and that is you must be prepared for any situation. Even though you may not need some of the tools now, would you need them if you were stranded ten miles from nowhere?

THREE-YEAR LIFE

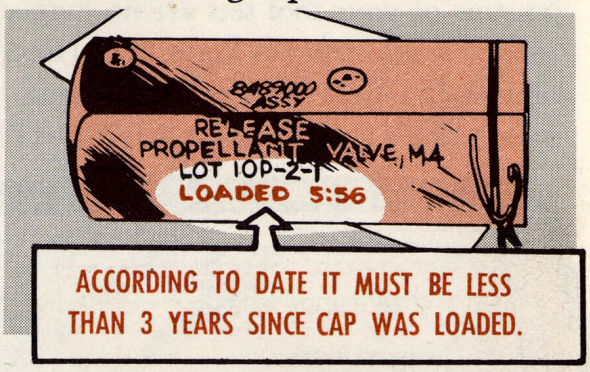
UP up up she goes and if your Corporal won't shut off, anything goes.

One thing's for sure . . . your bird's not going to land on target if the propellant valve release doesn't work—like stopping the flow of the propellant when it should.

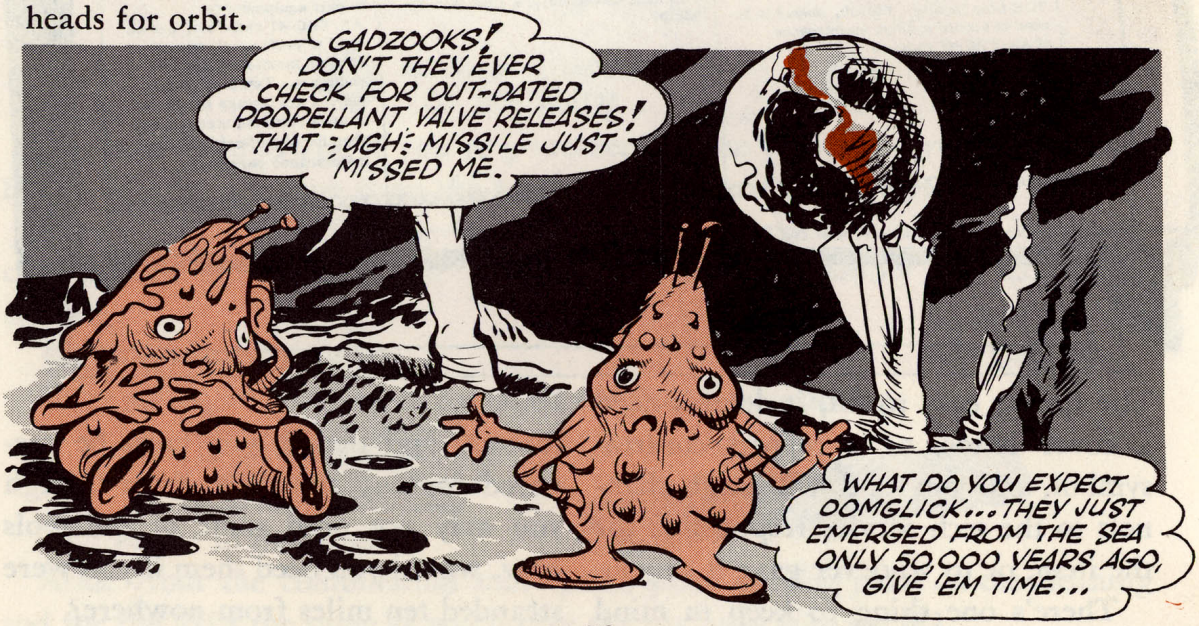
Nope . . . the missile will just keep going until it's plumb out of propellant. Then old man gravity takes over.

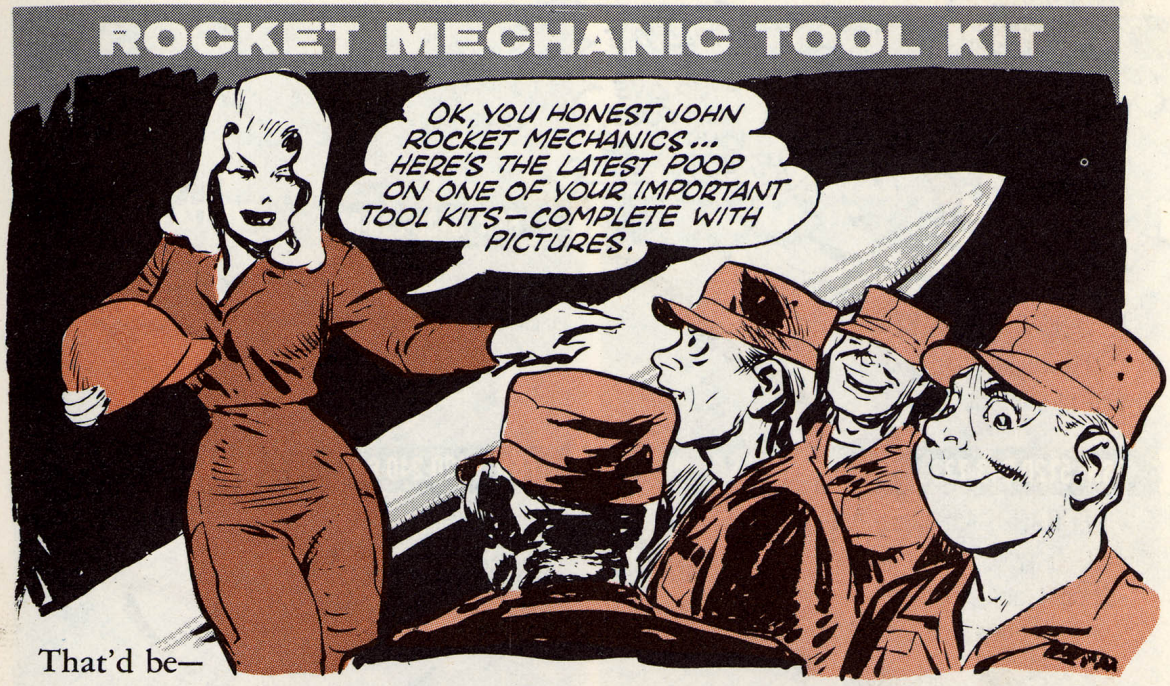
Seems the release is one of those things that wear out just by sitting in its container. And with the release—actually, it's the blasting cap in the release—the shelf life is figured at three years.

So . . . before you go to install the release, look on the cylinder for the date the blasting cap was loaded. If three or more years have gone by, send the release back to Ordnance and get yourself a new one. It's FSN 1336-338-6235.



It sure beats having a missile that heads for orbit.





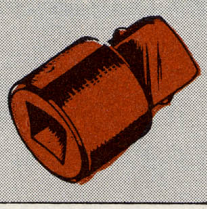
That'd be—

Tool Kit, Organizational Maintenance, Rocket Mechanic, 762mm (FSN 5180-034-8472), SM 9-4 5180-A64.

The TOE calls for one tool kit per battery. Check your gear and see that you've got all the items you're supposed to have. And there's one of each item in each kit.

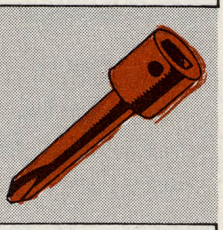
Don't let your bird become a gone goose 'cause you lack the right tools to keep your missile system in combat condition.

ADAPTER, SOCKET WRENCH: ¾-in male sq end, ½-in female sq end.



FSN 5120-144-5207 — QM

BIT, SCREWDRIVER: Reed and Prince cross tip, 5/16-in dia, ⅜-in sq drive shk, 3-in lg over-all.

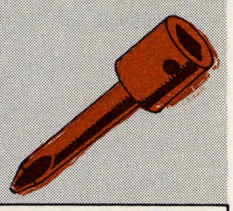


FSN 5120-204-1270 — QM

BIT, SCREWDRIVER: Phillips type cross tip, size No. 2, ⅜-in female sq drive shk, 2 1/16-in lg over-all.

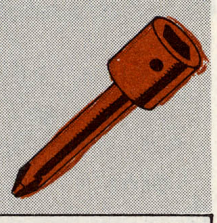
FSN 5120-293-0318 — QM

BIT, SCREWDRIVER: Phillips type cross tip, size No. 3, ⅜-in female sq drive shk, 2⅝-in lg over-all.



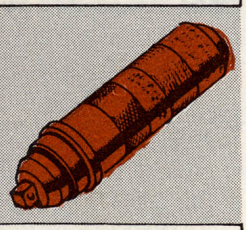
FSN 5120-180-9991 — QM

BIT, SCREWDRIVER: Phillips type cross tip, size No. 4, ⅜-in female sq drive shk, 3-in lg over-all.

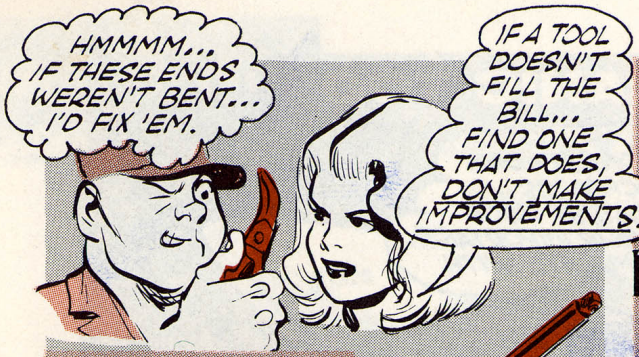


FSN 5120-180-0881 — QM

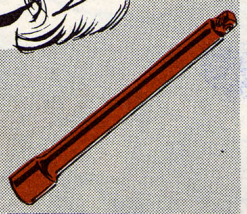
DRIVER, IMPACT: To loosen or tighten screws, bolts, nuts.



FSN 5120-532-9113 — QM

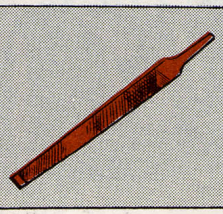


EXTENSION, SOCKET WRENCH: ½-in sq end, 5-in lg over-all.



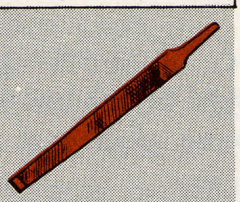
FSN 5120-243-7326 QM

FILE, HAND: American patt, fl type, dble cut sec-cut face, sgle-cut sec-cut edges, 10-in heel to pt.



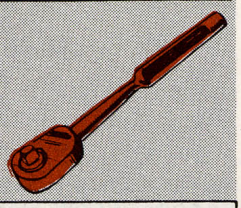
FSN 5110-234-6537 QM

FILE, HAND: American patt, mill type, sgle-cut, sm edges, 10-in heel to pt.



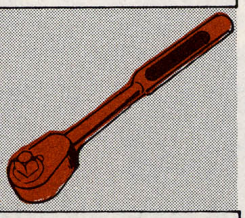
FSN 5110-241-9138 QM

HANDLE, SOCKET WRENCH: rct, rvrs ½-in drive end, 9½-in lg over-all.



FSN 5120-230-6385 QM

HANDLE, SOCKET WRENCH: rct, rvrs, ¾-in drive end, 18-in lg over-all.

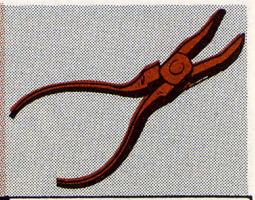


FSN 5120-249-1076 QM

PADLOCK: pin tumbler, mech w/dead bolt lkg, 9-in lg, 10,000 key changes solid br case, 1¾-in w, 1 7/16-in h w/ br shackle 0.302-in x 0.385-in dia.

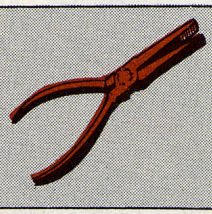
FSN 5340-682-1509 ENG

PLIERS: curved rd needle nose, 6-in size.



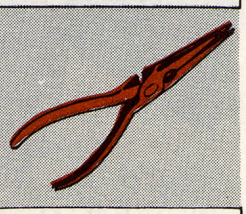
FSN 5120-239-8250 QM

PLIERS: flat wide nose, w/o cutter, 6-in size.



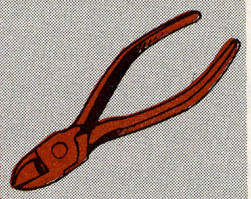
FSN 5120-240-6213 QM

PLIERS: lg round nose, w/cutter, 6-in size.



FSN 5120-247-5177 QM

PLIERS, DIAGONAL CUTTING: 6-in size.

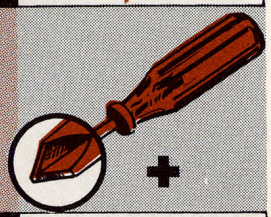


FSN 5110-239-8253 QM

PLIERS, SLIP JOINT: stght nose, comb. w/ cutter, 6-in size.

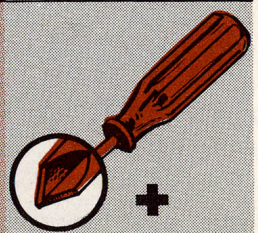
FSN 5120-223-7396 QM

SCREWDRIVER, CROSS TIP, Reed and Prince type, plastic hdl, ¼-in dia tip, 4-in lg blade.



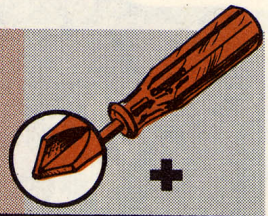
FSN 5120-237-8173 QM

SCREWDRIVER, CROSS TIP, Reed and Prince type, plastic hdl, 5/16-in dia tip, 6-in lg blade.



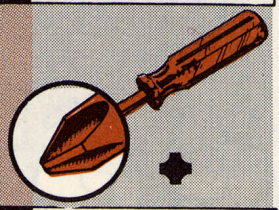
FSN 5120-237-8172 QM

SCREWDRIVER, CROSS TIP: Reed and Prince type, plastic hdl, 3/8-in dia tip, 8-in lg blade.



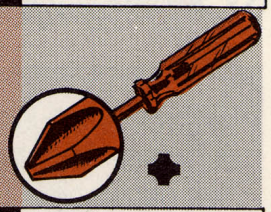
FSN 5120-237-8174 QM

SCREWDRIVER, CROSS TIP: Phillips type, plastic hdl, No. 2 tip, 4-in lg blade.



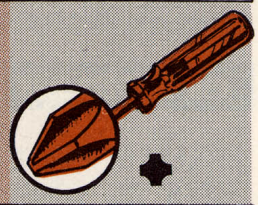
FSN 5120-234-8913 QM

SCREWDRIVER, CROSS TIP: Phillips type, plastic hdl, No. 3 tip, 6-in lg blade.



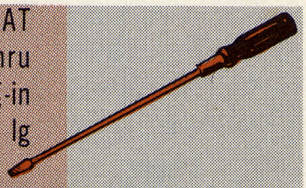
FSN 5120-234-8912 QM

SCREWDRIVER, CROSS TIP: Phillips type, plastic hdl, No. 4 tip, 8-in lg blade.



FSN 5120-224-7375 QM

SCREWDRIVER, FLAT TIP: blade goes thru wooden handle, 3/8-in w/flared tip, 12-in lg blade.



FSN 5120-293-3172 QM

SCREWDRIVER, FLAT TIP: plastic handle, 1/4-in w/flared tip, 4-in lg blade.

FSN 5120-222-8852 QM

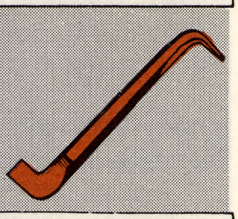
SCREWDRIVER, FLAT TIP: plastic hdl, plain light duty, 3/16-in w/stght sided tip, 3-in lg blade.

FSN 5120-236-2127 QM

SCREWDRIVER, FLAT TIP: plastic hdl, plain light duty, 3/16-in w/ stght sided tip, 5-in lg blade.

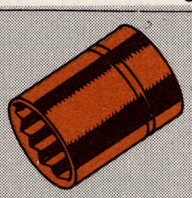
FSN 5120-278-1270 QM

SCREWDRIVER, OFFSET: dble-end, 3/8-in w/tips, 6-in lg over-all.



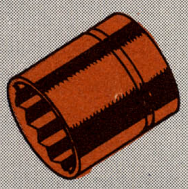
FSN 5120-240-5232 QM

SOCKET, SOCKET WRENCH: 1/2-in sq-drive, 1/2-in 12 pt opng, reg length.



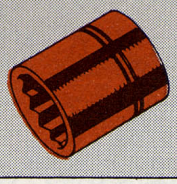
FSN 5120-237-0984 QM

SOCKET, SOCKET WRENCH: 1/2-in sq-drive, 9/16-in 12 pt opng, reg length.



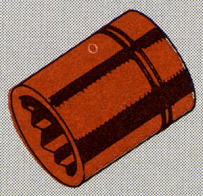
FSN 5120-189-7932 QM

SOCKET, SOCKET WRENCH: ½-in sq-drive, ⅝-in 12 pt opng, reg length.



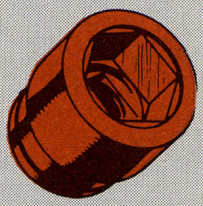
FSN 5120-189-7946 **QM**

SOCKET, SOCKET WRENCH: ¾-in sq-drive, 1 7/16-in 12 pt opng, reg length.



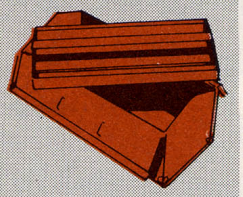
FSN 5120-189-7931 **QM**

SOCKET, SOCKET WRENCH: w/o power tools, ¾-in sq-drive, 1-in 6 pt opng, hv-duty industrial type.



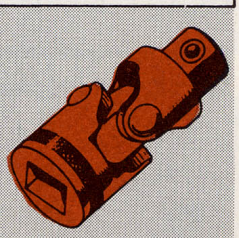
FSN 5130-227-6679 **QM**

TOOL BOX, MECHANICS: steel, 21-in lg x 8½-in w x 7⅜-in h, 14 lb wt. S centr w/one removable tray.



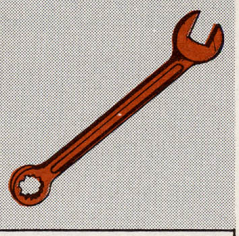
FSN 5140-498-8772 **QM**

UNIVERSAL JOINT, SOCKET WRENCH: ½-in sq-end.

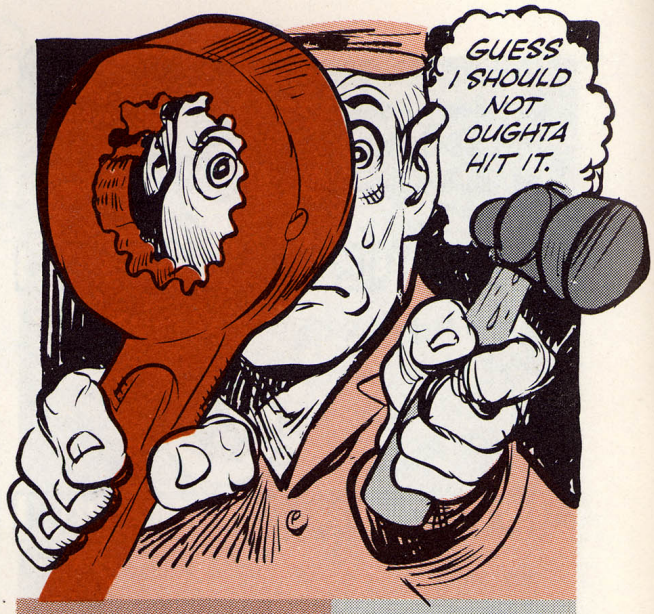


FSN 5120-269-7971 **QM**

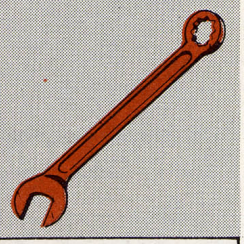
WRENCH, BOX AND OPEN END, COMBINATION: offset type, 15 deg angle, 9/16-in hex or 12 pt opng 5¾-in lg over-all.



FSN 5120-228-9507 **QM**

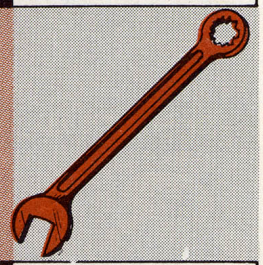


WRENCH, BOX AND OPEN END, COMBINATION: offset type, 15 deg angle, ⅝-in 12 pt opng, 6⅛-in lg over-all.



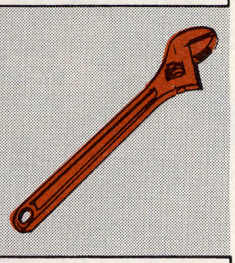
FSN 5120-228-9508 **QM**

WRENCH, BOX AND OPEN END COMBINATION: offset type, 15 deg angle, ¾-in 12 pt opng, 8-in lg over-all.



FSN 5120-228-9510 **QM**

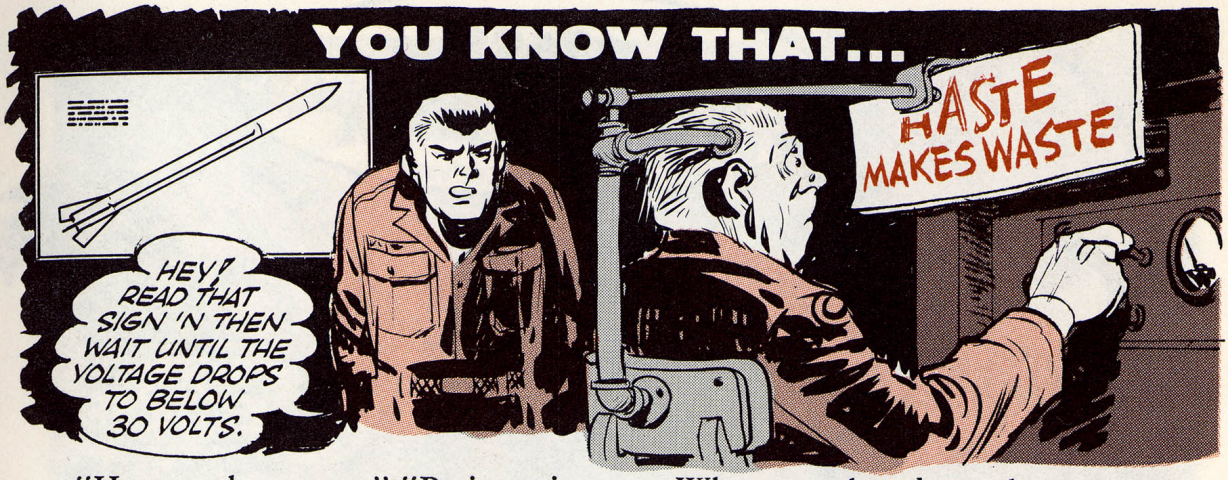
WRENCH, OPEN END, ADJUSTABLE: sgle-hd type 0 to 0.510-in jaw opngs, 4-in lg over-all.



FSN 5120-240-5330 **QM**

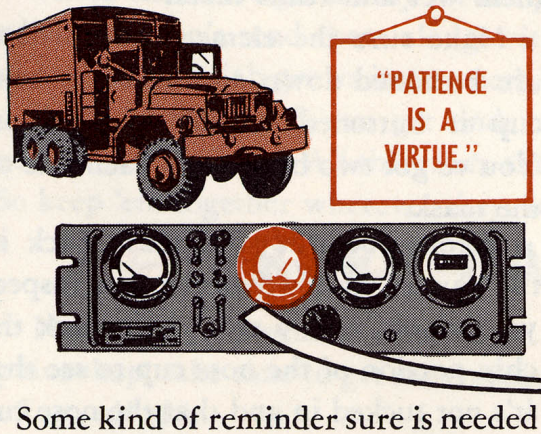
WRENCH, OPEN END, ADJUSTABLE: sgle-hd type, 0 to 1.135-in jaw opngs, 10-in lg over-all.

FSN 5120-449-8083 **QM**



"Haste makes waste." "Patience is a virtue."

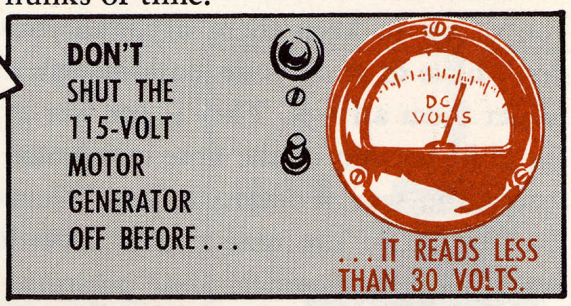
Either one of those quotes—or both—would look good tacked some place around the indicator panel in your Corporal guided missile test station.



Some kind of reminder sure is needed to make sure you don't shut down the 115-volt motor generator before the 400-cycle voltmeter on the indicator panel reads less than 30 volts.

When you shut down the generator before the voltage drops below the 30 figure, the control voltage is taken out of the controller before the 400-cycle power has fallen off. This sets the controller to running . . . and it keeps going till the 400-cycle power dies down.

Then when you go to energize the missile . . . the controller starts running right off. That means you waste—because of haste—a coupla seconds before you can reacquire the controller. And seconds can be mighty important hunks of time.



YOUR BEST BET

Until something else comes along, there's one way to get rid of the condensation that builds up in the container for your M26 Littlejohn rocket motor. Take out the drain plug and raise the other end high enough for the stuff to run out.

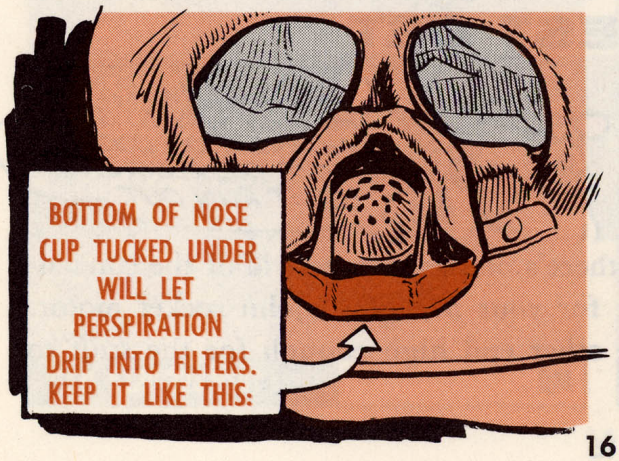
Your M17 protective field mask does not have a canister but it does have filter elements instead.

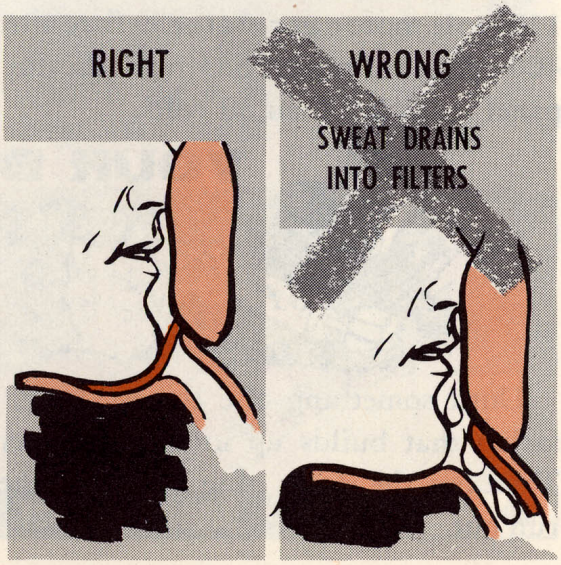
When you breathe in, air is drawn into the facepiece of your mask through inlet valves and then passes through the filters which are in the pouches molded in the cheeks of the facepiece.

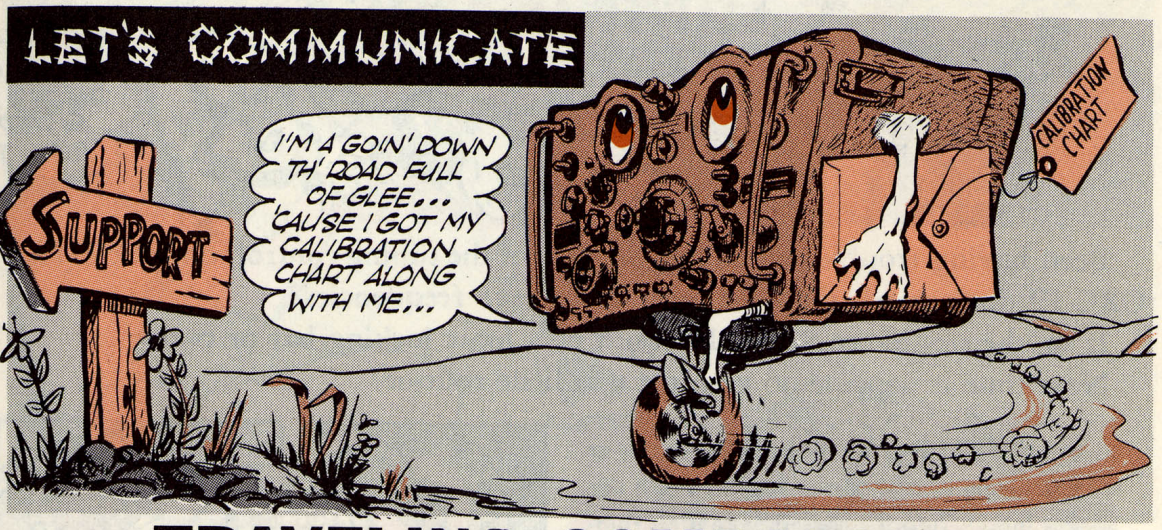
Those filters will do their job but you've got to keep them dry. No you don't have to dunk your mask in water to get them all wet. They'll get wet if the chin portion of the nose cup is not seated the way it ought to be. When the bottom of the nose cup is tucked inside or turned under, your perspiration drips down into the filters and gets them wet and ruins them.

Make sure the element pouch flaps are buttoned down and that the nose cup is buttoned to the pouch flaps. You've got two buttons on each side of the mask.

Before you put your mask back in the carrier and whenever you inspect your mask, take a second to check the chin portion of the nose cup to see that it's not tucked in and that the nose cup and flaps are buttoned right.







TRAVELING COMPANIONS

That's what radar test set AN/UPM-6A or AN/UPM-6B and its calibration chart should be whenever the set goes back to support for repair or modification.

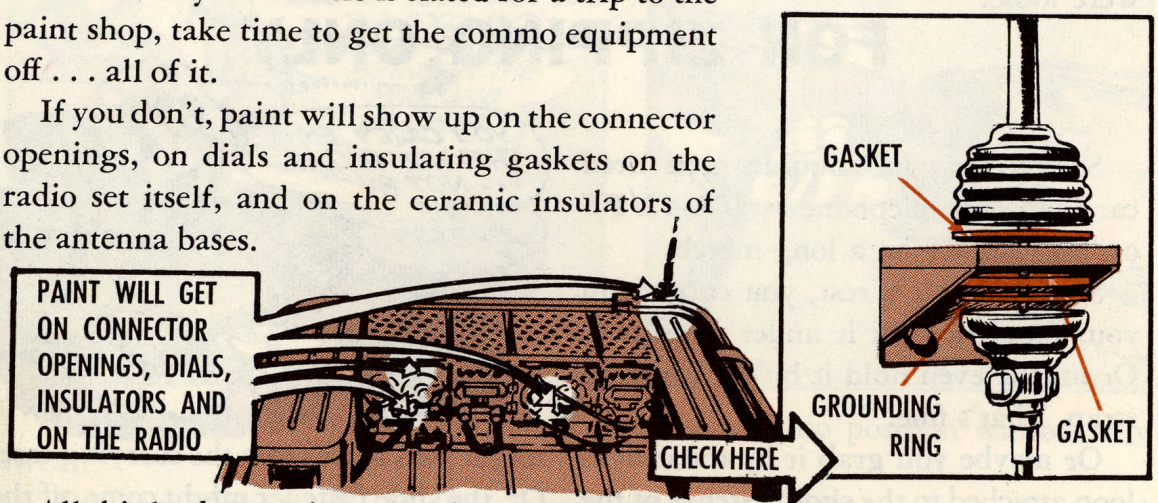
Those charts are good only for the particular set for which they were made. So when you don't send them along with the set, what started out as only a repair or modification job grows into something bigger.

Before repair work can get underway, the set must be re-calibrated and another chart made up. All this takes time . . . time that the set is away from you. So keep 'em together wherever they are . . . and wherever they go.

KEEP PAINT AWAY

Next time your vehicle is slated for a trip to the paint shop, take time to get the commo equipment off . . . all of it.

If you don't, paint will show up on the connector openings, on dials and insulating gaskets on the radio set itself, and on the ceramic insulators of the antenna bases.



All this leads to a nice painted wagon, but bad communications.

And, whether you take the set off to save it from a spray job or for any other reason, be sure you put it back right. F'rinstance, those mast base gaskets. Each one is supposed to be snug against a ceramic insulator, one above the mounting bracket, and the other below it. Double check to be sure they're installed that way.

A TUNING TRICK

Been having troubles when one or both of the tuning controls on your T-195/GRC-19 don't work together with the preset frequencies?

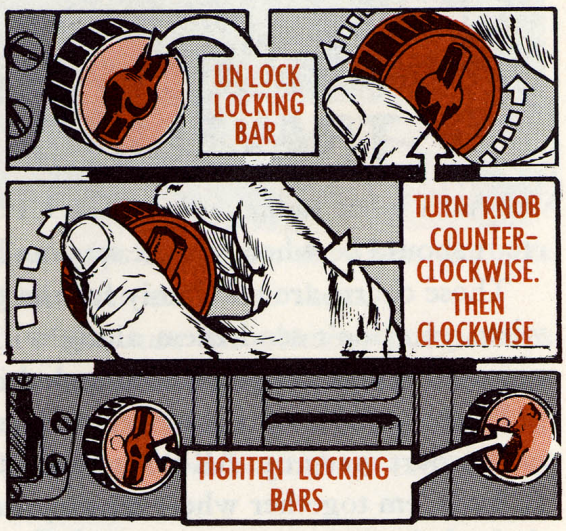
If so, the trouble could be the result of a loose locking bar or two.

Next time it happens to you, try this little routine:

Unlock the locking bar of the band selector or fine tuning control (depending on which bar was loose). Turn the control or controls completely counterclockwise. When you can't go any farther, apply slight—repeat, slight—pressure.

Then turn the control or controls in the opposite direction. Again put on a little pressure when you reach the end.

Tighten the locking bars and your controls should be synchronized with the preset frequencies.



But don't get shook when you find you've lost one of your presets. You're bound to lose the one your tuning controls were set at while the locking bars were loose.

FOR ZIPPING ONLY

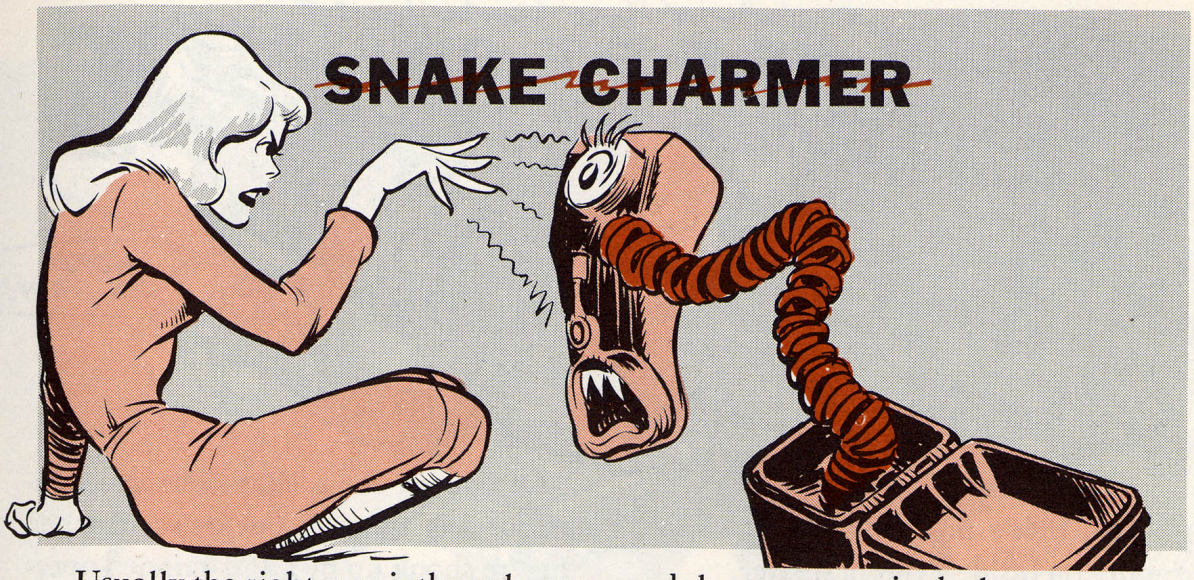
Sometimes your shoulder gets tired carrying that telephone set TA-43/PT or TA-312/PT on a long march.

So, to give it a rest, you carry it in your hand or tuck it under your arm. Or maybe even hold it by the carrying strap. That's fine.

Or maybe you grab it by the canvas loop attached to the slide fastener of the zipper. That's not so fine.

That 9½ pounds of phone will put a heavy strain on the zipper. Sooner or later something's got to give. The zipper might pull loose from the carrying case. Or, the slide fastener might come off the zipper.

The loop is there only to make it easier for you to open or close the case, especially if you're wearing gloves.



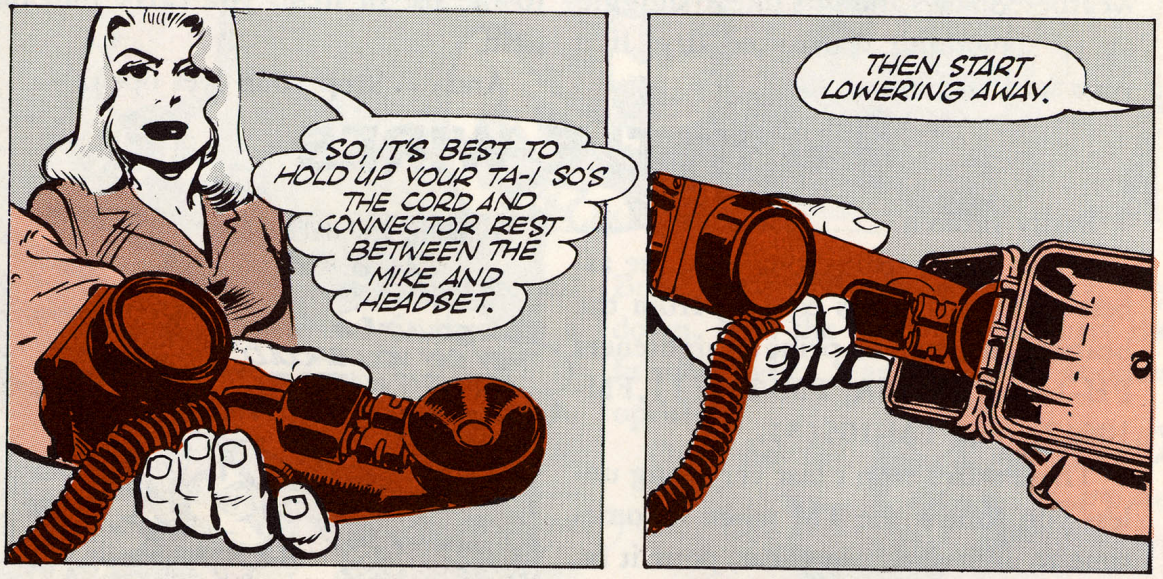
Usually the right way is the only way—and the easy way—in the long run.

Well, that's enough philosophy for this time.

But few people will argue that slipping the handset cord and binding post connector into the carrying case of your TA-1/PT telephone set can give you fits—unless it's done the right way.

'Cause trying to stuff it in any old way leads to lots of sweat and sometimes leads to damaged equipment.

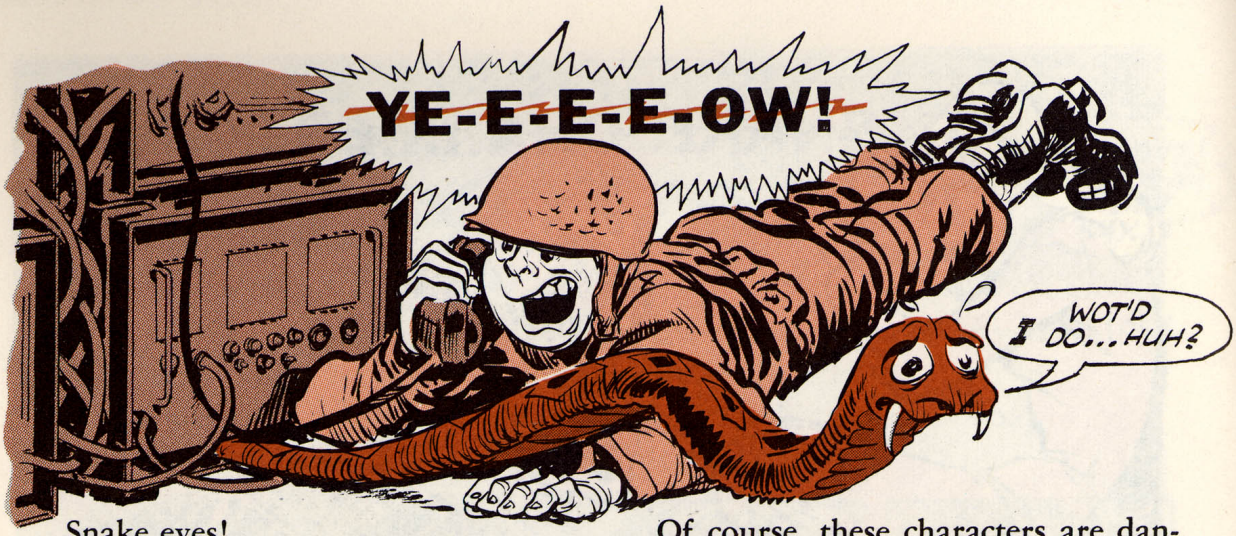
So how, then?



That way, it'll be easier to snake the cord down into position without any sweat.

That part of the cord left over after the phone is snug in its case can be coiled around the top of the phone—with plenty of room to spare comes time to close the cover.

It's a fairly tight fit, but a man who snakes the whole works down into the case slow and easy-like will always make out a good case for himself.



Snake eyes!

No, that's not a "game of chance" going on inside a comm shelter.

It's just an operator telling his crew what he found staring at him when he pulled his set out of its case to do some PM.

This is likely to happen when your set — whether it's terminal or relay equipment—stands outside during foul weather. Snakes and rats like to snuggle up to something warm and dry, like your set f'rinstance.

Of course, these characters are dangerous any time . . . but more so when they're shook up by a PM-minded operator as he opens his set. And, they can knock communications out if they gnaw or bite through insulation or touch a contact. Knock themselves out, too.

To keep these uninvited guests out of your equipment, add rodenticides (fancy name for rat killers) and traps to the list of items you carry into the field.

And . . . keep your eyes open.

BRITTLE WIRES

Easily broken.

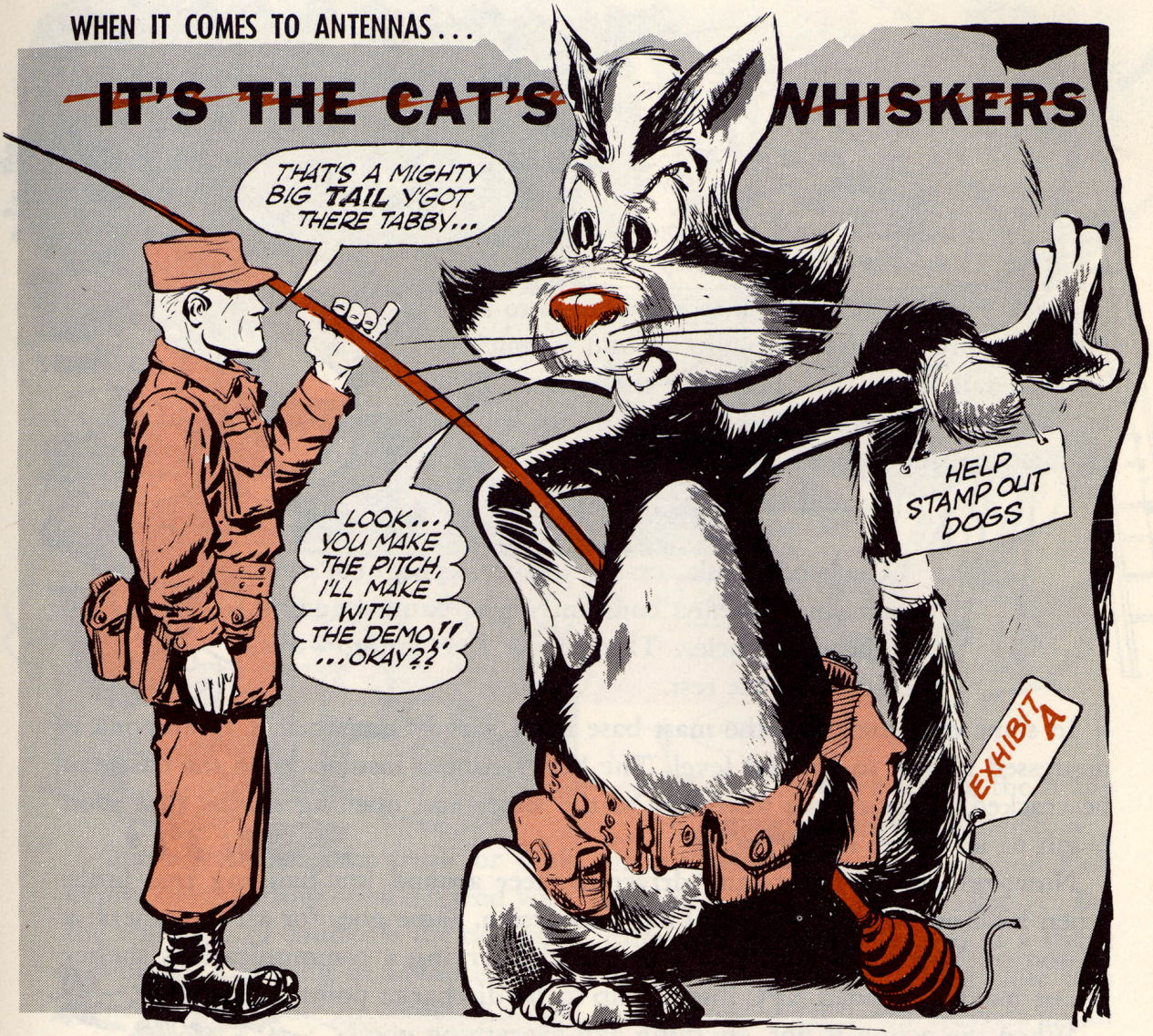
That's the warning out on those asbestos covered wires coming from the heating elements of print straighteners PH-146, PH-146A, FM-105(1), FM-105(2), and FM-105(3).

These wires won't last very long unless you follow the TM when it comes time to add water. In short, pour it in. The other method—unplugging the heater cable and carrying the water pan to the nearest sink—weakens the wires.

And, watch that water level. If it gets too low, you'll burn out those wires. To be safe, keep the level between the half and three-quarters mark.

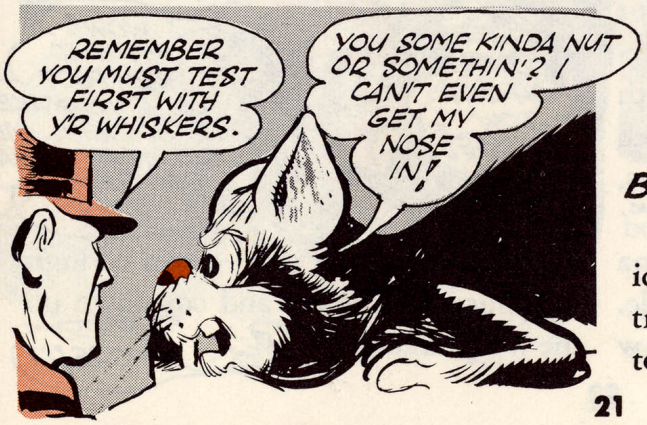
WHEN IT COMES TO ANTENNAS...

IT'S THE CAT'S WHISKERS



'Tis said that the cat's whiskers tell Tabby whether she can fit through a spot or not.

If just the ends of her whiskers touch, chances are there's room to slip through.



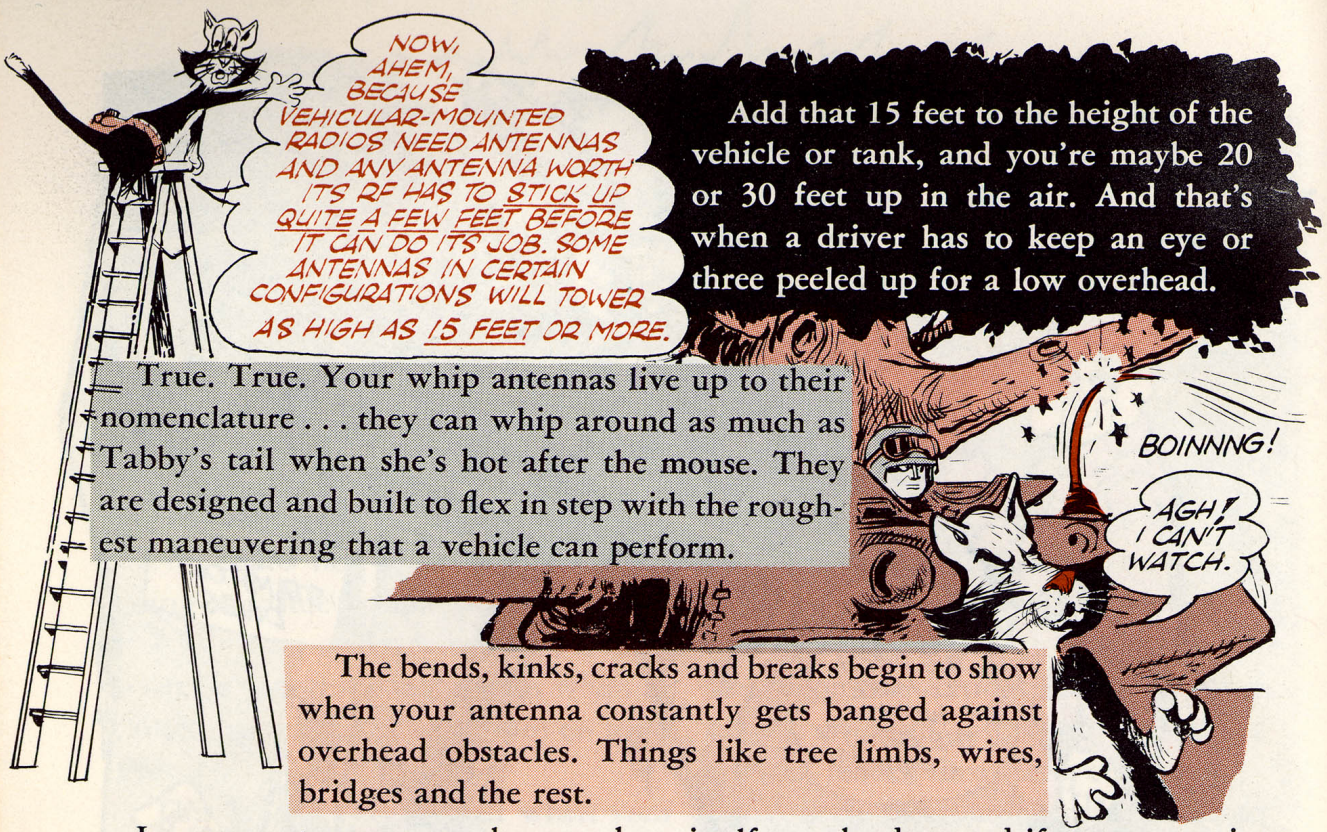
But if those whiskers get bent way, way down, then the shrewd cat figures the fit's too tight . . . and looks for another opening.

Or so they say.

BACK TO THE STORY...

But the cat's whiskers might be an idea for a driver to keep in mind if his truck, tank, APC, or what have you, is totin' communications equipment.

P.S. MORE



In some extreme cases, the mast base itself may be damaged if an antenna is depressed almost to ground level. The heavy rubber insulation on the base can be cracked, reducing the flexibility of the base, and opening cracks that soon begin to let water in.

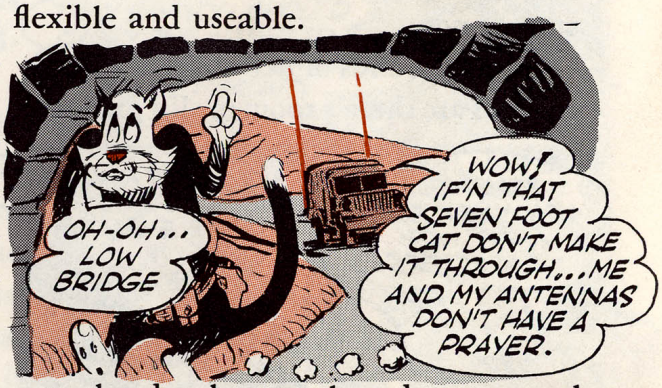
Now, no CO expects a tank driver to steer around low-hanging tree limbs when his iron buggy starts clanking into action. Same goes for all the others: a ¼-ton or ¾-ton truck . . . a 2½-ton truck carrying a communications shelter . . . or maybe a loaded APC hustlin' up to its discharge point.

When the action is hot, anything and everything goes!

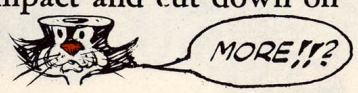
And if some antennas have to bend mighty low—that's the way it has to be.

But the rest of the time—which is most of the time—a good driver can go a long way toward keeping his antennas flexible and useable.

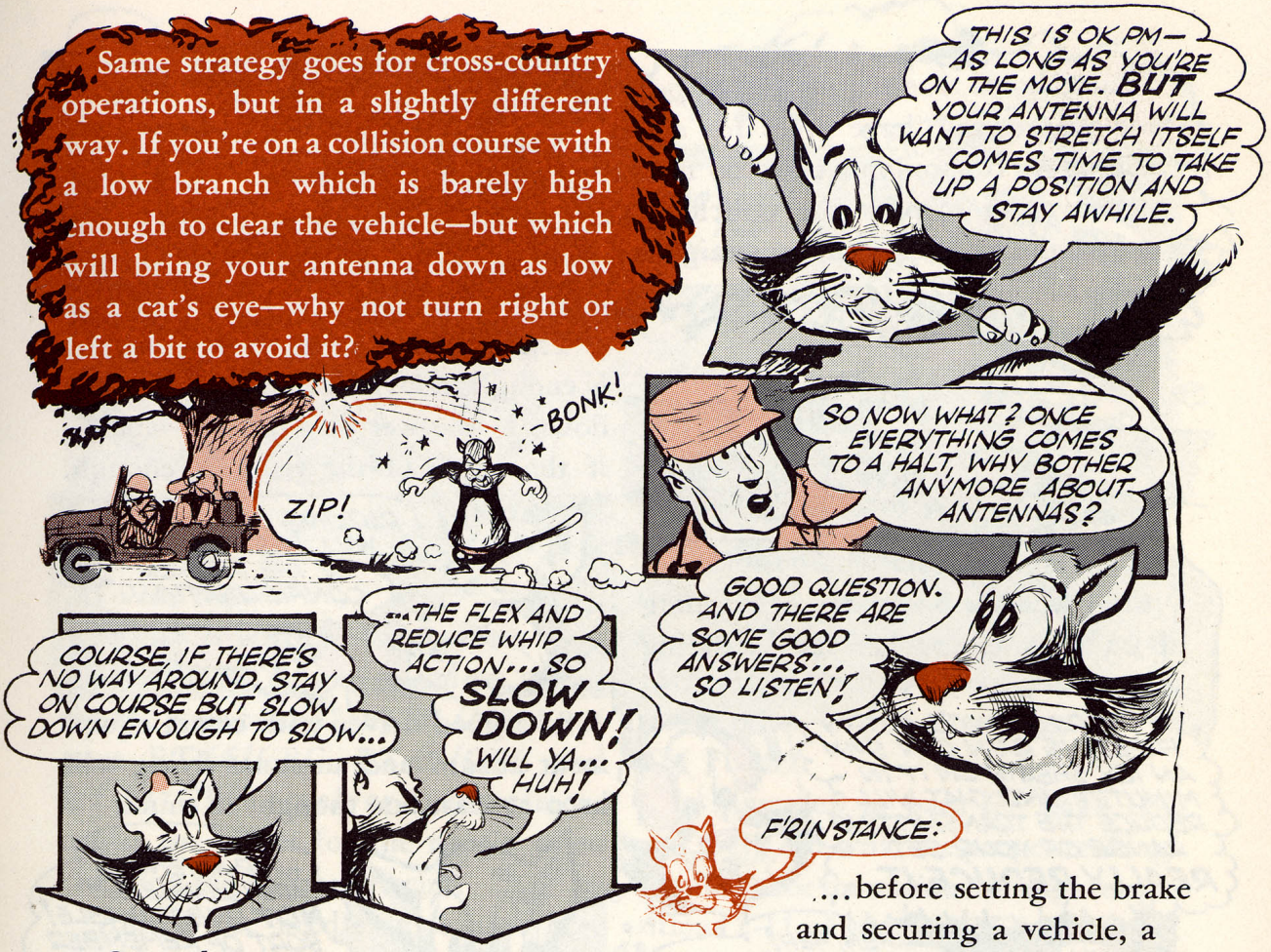
One of the skills he can develop follows the old "cat's whiskers" approach. When rolling along on either a good or not-so-good road, bear in mind the overall elevation of your antenna. And with that in mind, keep an eye up for such things as overhead wires, tree branches, bridges and others.



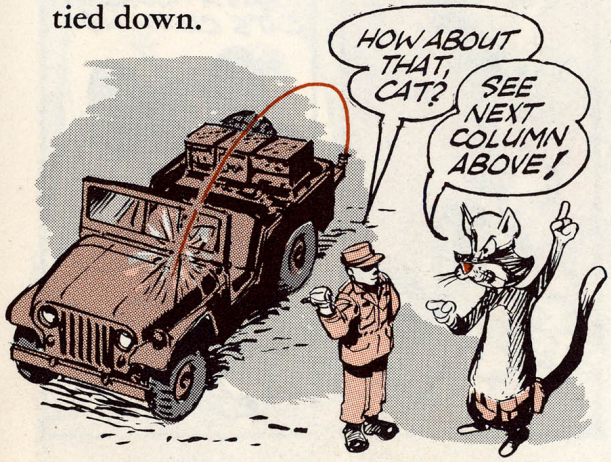
If they're not too low, your antenna can absorb the impact and flex in stride. But if you're heading for a really low overhead, why not slow down enough to reduce the impact and cut down on the whip effect?



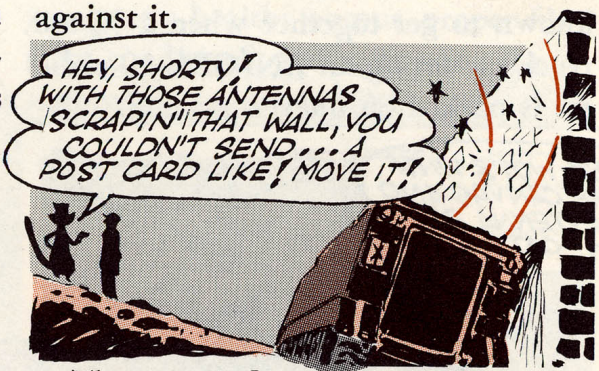
Same strategy goes for cross-country operations, but in a slightly different way. If you're on a collision course with a low branch which is barely high enough to clear the vehicle—but which will bring your antenna down as low as a cat's eye—why not turn right or left a bit to avoid it?



One advantage your truck or tank enjoys over the four-footed friend with the whiskers, of course, is the tie-down technique. Knowing in advance that a maneuver will take its course through wooded terrain or under and over more than a few bridges, a good driver can practice antenna preventive maintenance in advance by keeping his whips tied down.

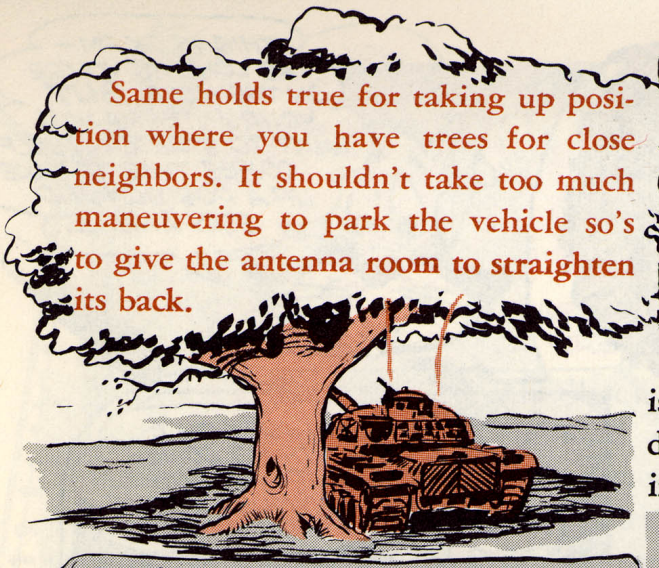


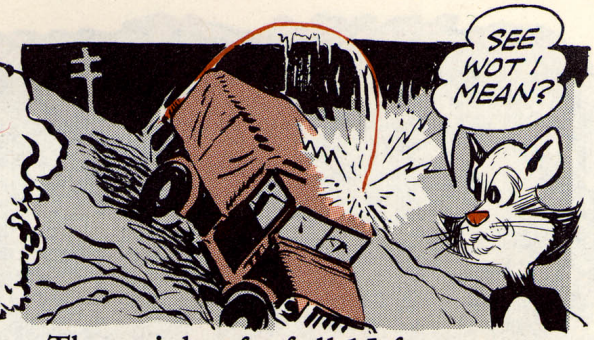
....before setting the brake and securing a vehicle, a driver will want to look up and look around. . . . Because if a vehicle is parked at a slight angle—and is also snuggled close to a wall or side of a hill—the antenna might be leaning over enough to scrape against it.



That won't **hurt** the antenna, maybe, but it can sure cut down on its electronic performance. Just jockey the vehicle a bit so the antenna is free to stand up by itself.

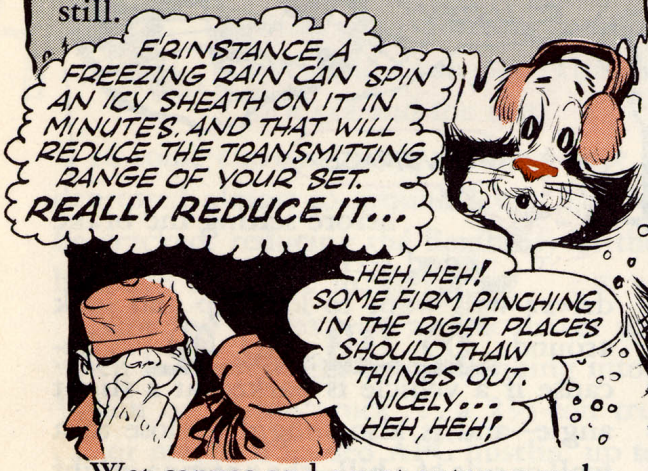
Same holds true for taking up position where you have trees for close neighbors. It shouldn't take too much maneuvering to park the vehicle so's to give the antenna room to straighten its back.



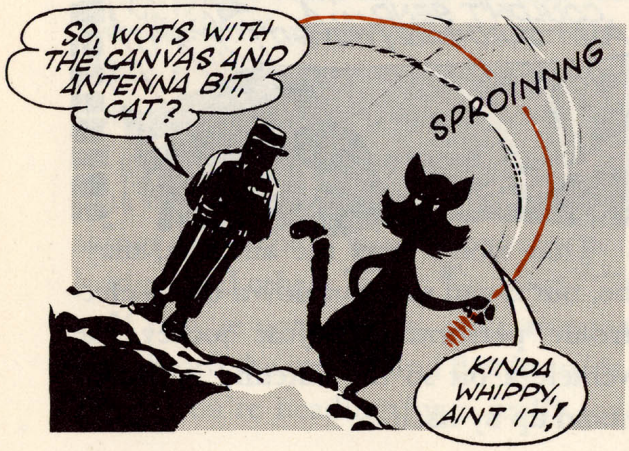


The weight of a full 15-foot antenna is enough to make it droop all the way down to the wet tarp on the vehicle—if the angle of the truck is enough.

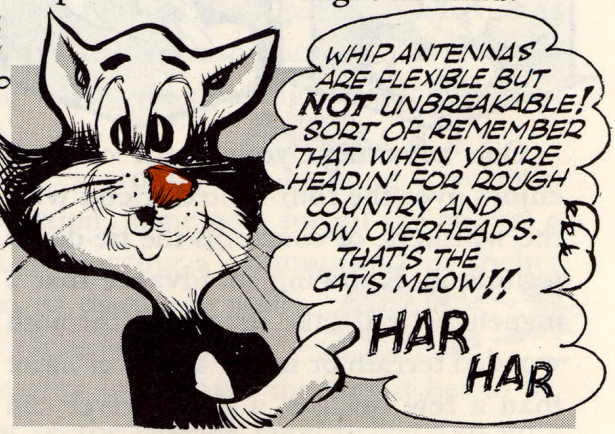
Speaking about stationary subjects... Cold weather has a way of creeping up on an antenna when she's standing still.



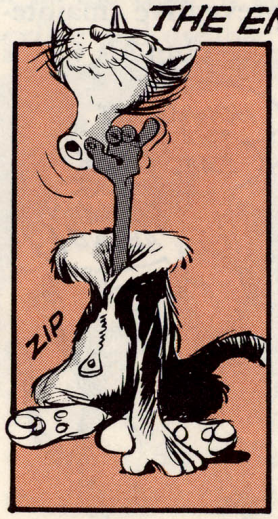
Wet canvas and a wet antenna make a bad combination. But they've been known to get together when a ¾-ton truck mounting an AN/GRC-19 radio set is parked on uneven ground.



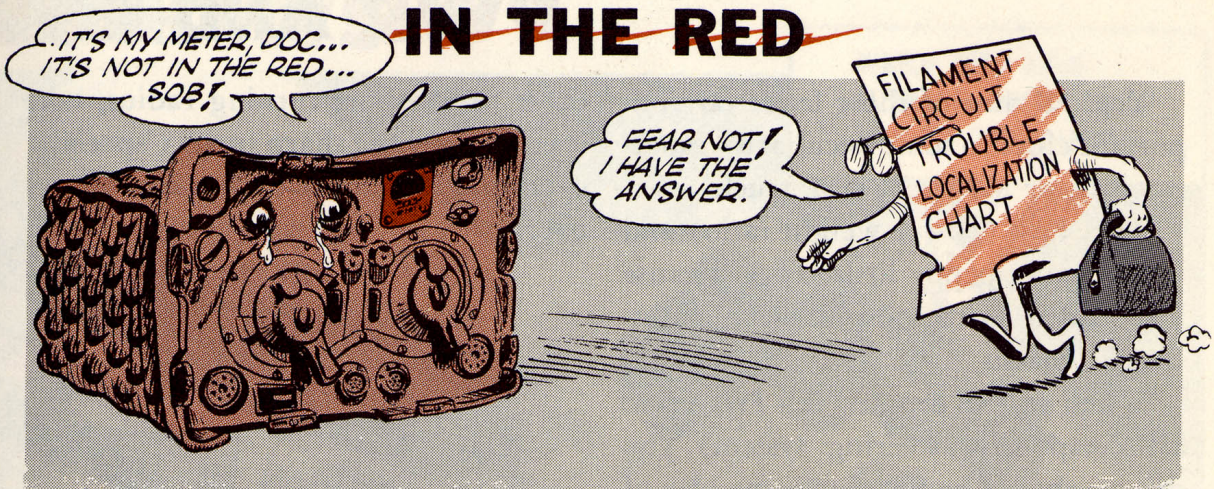
So a good driver with comm equipment aboard and antennas flying will keep at least one thought in mind:



THE END.. EXCEPT FOR...



IN THE RED



That's where you want to be.

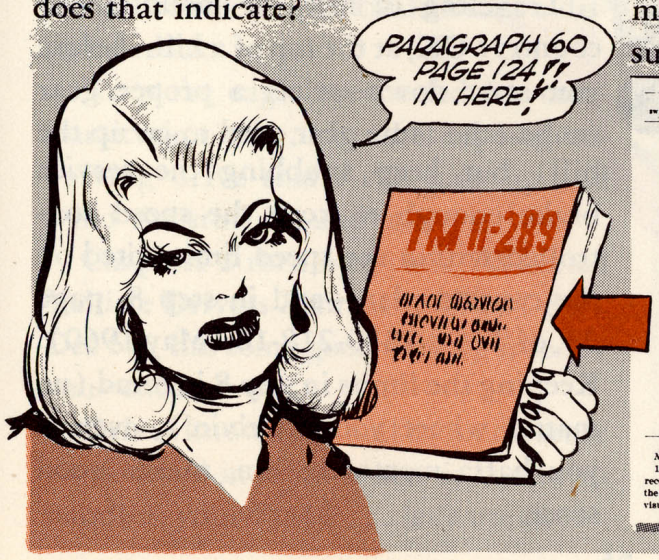
In the red.

Which is why the red is there.

What it all means, of course, is that the red zone on the METER (M301) of your RT-66/GRC, RT-67/GRC and RT-68/GRC receiver-transmitters marks the target for the needle when checking the filament circuit.

And if the needle stops anywhere outside that red zone, the time has arrived to check for trouble in the circuit.

But how to check! What if your METER SWITCH (S301) is set at number position, f'rinstance, and the needle indicates a low reading. What does that indicate?



Just about this point you need a chart. As it turns out, that "Filament Circuit Trouble Localization Chart" just might be overlooked among the many other charts, drawings, etc., in TM 11-289.

It shows up in para 60, page 124, and spells out what the proper readings should be for the various settings for positions 2-11 of your METER SWITCH.

And like its name suggests, the chart localizes the trouble and points a finger at the item that's probably causing the trouble.

Keeping an eye on the meter and the chart will be all you need to make sure you have a healthy output, proper filament conditions, and sufficient voltage supply.

METER switch position	Zero reading	Too low but not zero reading	Too high but not full-scale reading	Full-scale reading
2	L13, C49, C50, C46, C51, R50, C60, C301, R47, C64, combination of R34 and V7. See note 5.	V7	V9	V9, combination of V9 and R44.
3	R57, C52, C61, R48, C63, combination of R35 and V8. See note 5.	V8	V10	V10, combination of V10 and R45.
4	L11, C42, V6, C41, R28, and C43.	C31		V5 and R25.
5	C135, R124, L116, R125, C139, combination of R123 and V106.	V106		V104.
6	V105, R121, C136, and C134.			R122.
7	V116, L136, C195, R163, C190, combination of R161 or R162 and V114.	C191, C14, and C13.	V113 and V3	L135, L5, combination of R14 and V3, L4.
8	L7, V4, R19, C23, C22, combination of R18 and V4.		V2	R10, combination of R9 and V2.
9	R107, V102, R105, C112, and C149.	C116		V107, L107, and V103.
10	V108, C154, L125, C174, V110, R150, and C171.	R148, R149, C179, C178, and C185.	V112	L128, V111, L131, combination of R159 and V112.
11	R176, C144C, V115, L122, R142, C164, and C165.	C163 and C107	V109 and V101	L105, L106, L102, combination of R143 and V109, combination of R102 and V101

Notes:

1 The transmitter power amplifier tube V11, and the receiver first r-f amplifier tube, V1, are not checked by the METER switch. These tubes must be checked by visual inspection. Observe whether (with power applied) the tube filaments are lighted. The filament of V11 is energized when the microphone push-to-talk button is operated.

2. Because of the series-parallel arrangement of the tube filaments, a break in the filament of one tube in a

PWR AND RSS

Yep, all nine of those letters are important clues to some peculiarity inherent in your M151, ¼-ton, truck.

Take **PWR** (power weight ratio) and you've got a peppy little truck because it's loaded with power on a lightweight chassis.

When you've coupled this **PWR** up to **RSS** (responsive steering system) you drivers should be forming some idea of your M151's driving capabilities. Because of its short turning radius, take 'er easy on those sharp turns ('specially over rough terrain) or you can flip 'er over.

There is a third characteristic in your M151—but an important one nevertheless—**IWS** (independent wheel suspension). With this type of suspension, you may not realize the speed she's goin' because much of the bumping is absorbed (no warning telegraphed)... so you try to turn on a dime and can't make it.

Traveling in hilly or mountainous country? OK, at the top of a hill—before you start down—select a proper gear range (the same gear used to go up the hill) but keep snubbing the service brake enough to keep the speed controlled within the speed limits cited on the caution plate—and in step 8, page 23, of TM 9-2320-218-10 (May 1960). Keeping the limits in step 8 in mind (no matter where you're drivin'), even if you hafta memorize 'em, makes good sense.

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Whenever the countryside has boulders, stumps, etc., strewn here and there . . . pick your trail right careful-like.

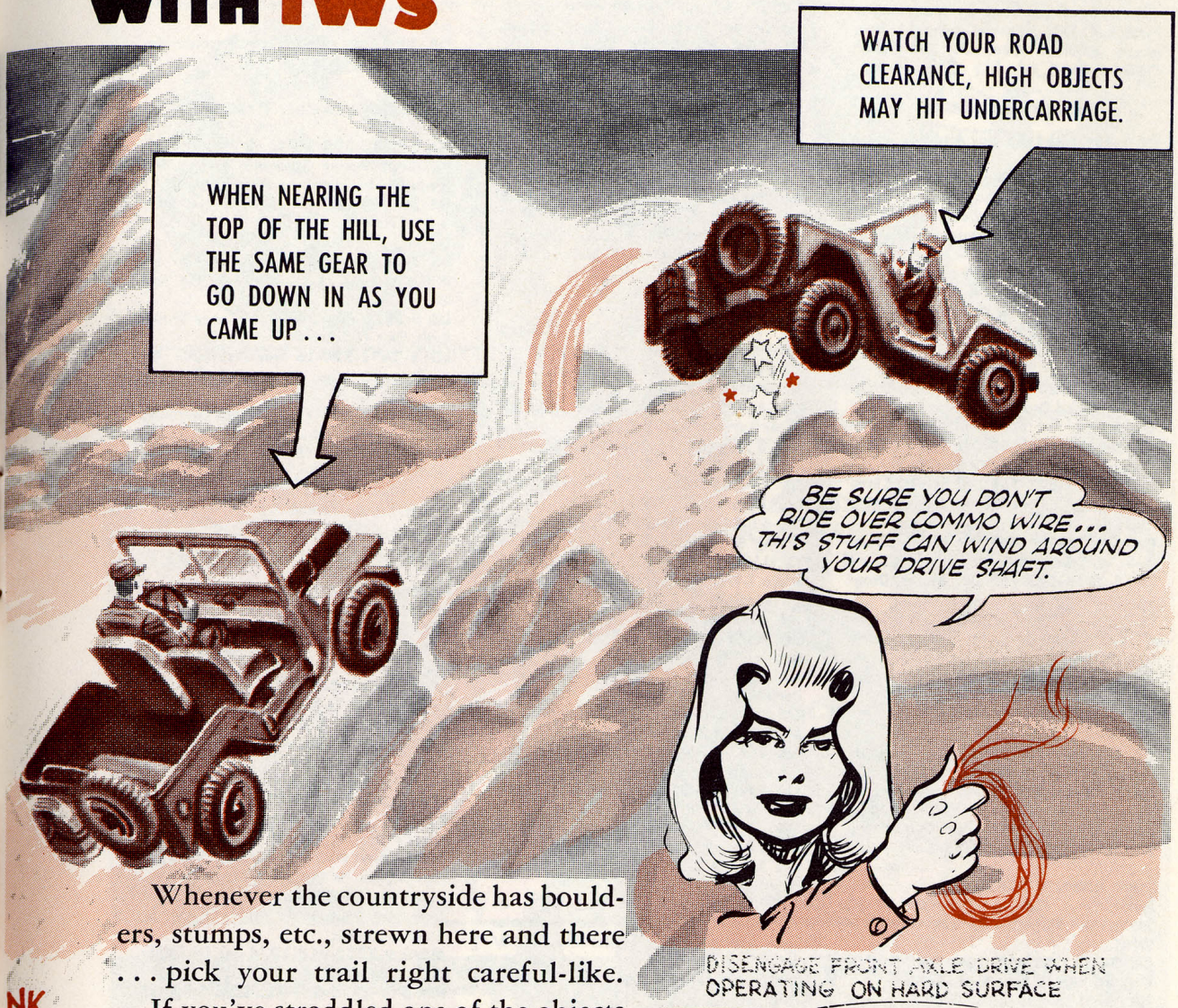
If you've straddled one of the objects and misjudged its height, the rap taken by the undercarriage could mean a disabled truck.

Keep the eagle eye peeled for communication wire, else the exposed revolving drive shafts can pick up and wind the stuff around 'em.

Chapters 2 thru 6 of your "Wheeled Vehicle Drivers Manual" (TM 21-305, Dec 56) has some good driving info for you—check it out.

Driver know-how and common sense work hand-in-hand when it comes to handlin' your M151 . . . let's use it.

WITH IWS



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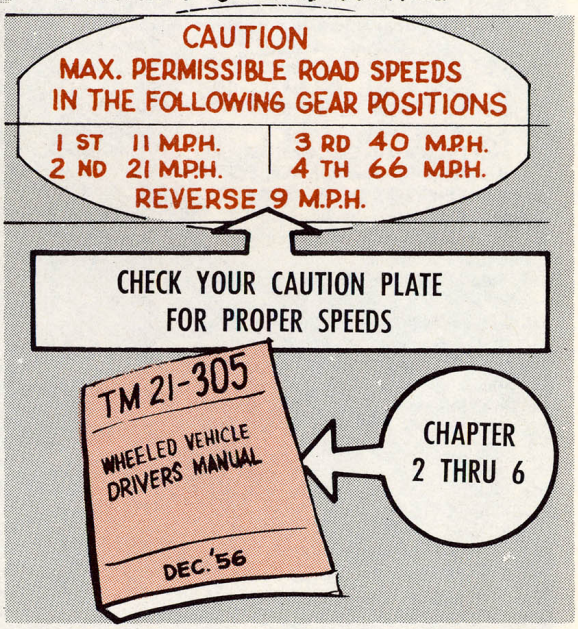
Driver know-how and common sense work hand-in-hand when it comes to handlin' your M151 . . . let's use it.



A selected list of recent publications of interest to Organizational Maintenance Personnel. This is a list compiled from recent Adjutant General's Distribution Center Bulletins.

TECHNICAL MANUALS

TM 3-1040-208-15 Nov Airplane Smoke Tank, M3.
TM 3-4240-237-15 Jan Protective Outfit, Imper, Sup-Air, M5.
TM 5-3740-200-25P Dec Sprayer, Insecticide, Curtis Auto Devices Mod CFR-40000.
TM 5-3805-229-20P Nov Loader, Bucket Barber-Greene Mods 82-A, 82-AG.
TM 5-3810-220-20P Nov Crane, Shovel, 7 Ton, ½ Cu Yd, Military Mod M7.
TM 5-3815-200—15P Dec Bucket, Clamshell: Erie Steel Size X1, XO, XO2.
TM 5-3815-201-15P Dec Bucket, Dragline: ¾ Cu Yd Drake-Williams-Mount Mod APX.
TM 5-3815-202-15P Dec Bucket, Clamshell: Blaw-Knox Size 604-1, 672, 724-H.
TM 5-3815-203-15P Dec Bucket, Clamshell: ¾ Cu Yd, W/Teeth; Johnson Mod TY335-5.
TM 5-3815-204-15P Dec Bucket, Clamshell: W/Teeth; ⅜ Cu Yd.
TM 5-3815-205-15P Dec Bucket, Dragline: YAUN Mod A.
TM 5-3815-206-15P Dec Bucket, Clamshell: W/Teeth; ½ Cu Yd Kiesler Type N, Size 38¾ Cu Yd Kiesler Type N, Size 70.
TM 5-3815-207-15P Jan Bucket, Dragline Hendrix Mod TS ¾ Cu Yd.
TM 5-3825-213-10 Dec Snow Removal Unit, Fwd Mod S-349-V.
TM 5-3895-250-15P Dec Hammer, Pile Driver, McKiernan Terry Mod 7.
TM 5-3895-251-25P Dec Hammer, Pile Driver, Air-Steam Driven; Valcan Mod 1.
TM 5-4310-229-20P Dec Compressor, Rotary: 210 CFM; 100 PSI Davey Mod M-210-RP.
TM 5-4320-216-25P Dec Pump, Centrif: Fresh Water, Gas Driv; Base Mtd; 4 IN; 200 GPM; 300 Ft Head Carver Mod 4 WHIS.
TM 5-6115-233-20 Nov Gen Set, 30 KW, AC Kurz & Root Mod Cleo-1.
TM 5-6115-237-20P Dec Gen Set, Diesel 100 KW, Consolidated Diesel Mod 4115.
TM 5-6115-244-10 Nov Gen Set, 10 KW, AC, Pacific Mercury Mod PM 59-010-1.
TM 5-6115-259-20 Jan Gen Set, 5 KW, Kurz & Root Mod Eric 1.
TM 5-6115-274-10 Dec Gen Set, 45 KW, AC Stewart & Stevenson Mod 52300.
TM 5-6675-213-15 Dec Theodolite, Directional Wild Heerbrugg Inst Mod T-2.
TM 5-6675-223-25P Jan Transit, Telescopic, Brunson Mod 30.
TM 5-6675-226-25P Dec Alidade, Surveying: Warren Knight Mod 72.
TM 9-1005-240-20, -20P Dec Twin Helicopter Mounting Cal .30 Mach Gun XM1.
TM 9-1375-203-20P Jan 10-Cap Capacity Handle-Operated Blasting Mach.
TM 9-1385-9 Jan Explosive Ord Recon.
TM 9-2300-224-20P Nov APC M113.
TM 9-2320-235-10 Dec Trk, Cargo, 2½ Ton, M35A1 (Multifuel Engine).
TM 9-2330-257-14 Nov Semitrailer, Van: XM555, XM556, XM557 and XM558.
TM 9-4940-205-20P Dec Paint Spray Gun.
TM 9-5130-338-15P Nov Wrench, Impact, Hydraulic (Bowen-McLaughin-York Mod BML15436).
TM 10-500-10-2-3 Jan Rigging AN/GRC-87 and AN/VRC-18 in M38A1 ¼ Ton Trk on Combat-Expendable Platform.
TM 10-1670-202-25 Jan Parachute, Cargo, 28-Foot.
TM 10-3930-216-20 Dec 4,000 Lb MHE 170.
TM 10-3930-221-20P Dec 6,000 Lb MHE 153.
TM 10-4930-204-25 Jan Tank and Pump Unit, Liquid Dispensing, Trk Mounting.
TM 11-5805-233-20P Nov Terminal, Telegraph Carrier AN/FCC-3.
TM 11-5805-279-20P Nov Telegraph, Carrier Terminal AN/FCC-3A and AN/FCC-3B.
TM 11-5805-297-12P Dec Generator GN-41.
TM 11-5805-322-20P Dec Terminal VPT-1.
TM 11-5805-325-12 Dec Terminal, Telegraph AN/FGC-61A.
TM 11-5815-200-20P Nov Teletypewriter Set AN/FGC-20X.
TM 11-5815-246-20P Nov Facsimile Set AN/TXC-1.
TM 11-5820-212-20P Nov Frequency Shift Keyer KY-45/FRT-5.
TM 11-5820-270-20P Nov Radio Transmitting Set AN/GRT-3.
TM 11-5820-335-20P Dec Transmitters, Radio T-195/GRC-19, T-195A/GRC-19 and T-195B/GRC-19.
TM 11-5820-401-10, -20 Dec Radio Sets AN/VRC-12 and AN/VRC-43, -44, -45, -46, -47, -48 and -49.
TM 11-5820-417-20P Dec Alarm-Monitor RM-4.
TM 11-5820-453-20P Dec Radio Sets AN/GRC-87 & AN/VRC-34.
TM 11-5820-479-12P Dec Mast Base MP-65, MP-65A, and MP-65B.
TM 11-5830-226-12P Dec Panel, Patching SB-447/GSQ.
TM 11-5895-300-20P Nov Receiving Set, Panoramic Data AN/ARR-14.
TM 11-5965-249-15P Nov Headset—Microphone H-63/U.
TM 11-6115-206-20P Dec PE-75 Series.
TM 11-6115-222-12P Dec Generator Set, Gasoline Engine, Trailer Mtd PU-290/MR.
TM 11-6125-209-12P Dec Dynamotor Power Supplies DY-121/U, DY-131/U & DY-132/U.
TM 11-6125-217-12P Nov Motor Gen PU-335, MPM-25.
TM 11-6130-209-12P Dec Power Supply PP-1499/U.
TM 11-6625-203-20P Dec Multimeter AN/URM-105.
TM 11-6625-314-12P Nov Multimeter AN/USM-33.
TM 11-6625-326-12 Jan Analyzer, Spectrum AN/UPM-110.
TM 11-6625-360-20P Dec Amplifier Direct Current TS-580A/U.
TM 11-6625-393-12 Nov T/S, Radar AN/UPM-96.
TM 11-6625-464-20P Nov Electronic Switch TS-433B/U.
TM 11-6660-232-15 Jan Wind Measuring Sets AN/PMQ-3, -3A, -3B, & -3C.
TM 11-6665-213-12 Jan Radiacmeter IM-174/PD.
TM 11-6710-202-20P Nov Camera Sets, Motion Picture KS-10(1) and KS-10(2) and Camera PH-430-B.
TM 11-6720-211-20P Dec Camera Set, Still Picture KS-17A.
TM 11-6740-246-12P Dec Table, Film Plotting A-7.
TM 11-6780-213-12P Dec Chopper, Photographic Print, Semi-Automatic FM-6(1).
TM 11-7450-200-20P Dec Recorder-Reproducer AN/TNH-8.

LUBRICATION ORDERS

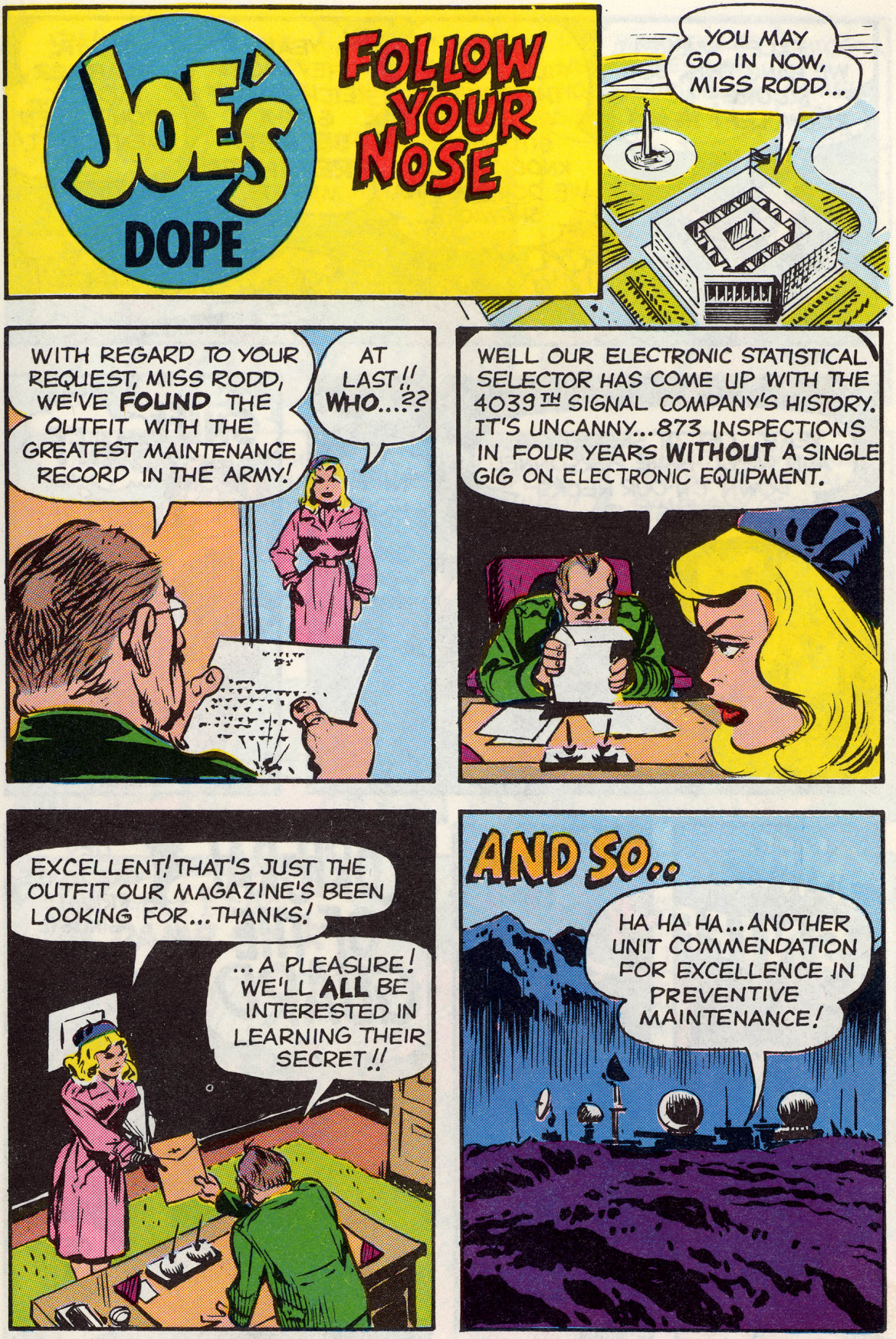
LO 5-2010-200-20-1, -2 Nov Propelling Unit, Marine Outboard: Murray and Tregurtha Harbormaster Mod OA6(TC).
LO 5-3210-200-20-1, -2, -3 Nov Sawmill, Circular Northeast Ohio Machine Builders Mod PN25.
LO 5-3805-212-20-1, -2, -3 Nov Intrenching Machine, Combat: Unit Rig Mod 4262.
LO 5-3810-207-20-1 Nov Crane-Shovel Basic Unit Quickway Mod M200.
LO 5-3895-220-15 Nov Distributor, Bituminous Material, Standard Steel Works Inc, Mod 424-56CE61.
LO 5-6115-296-12 Dec Gen Set, Gas Eng: 10 KW, Kurz and Root Mod FERO.
LO 9-2320-235-10 Dec Trk 2½ M35A1 (Multifuel Eng).
LO 10-3930-223-20 Nov 10,000-LB Rough Terrain Forklift Trk.

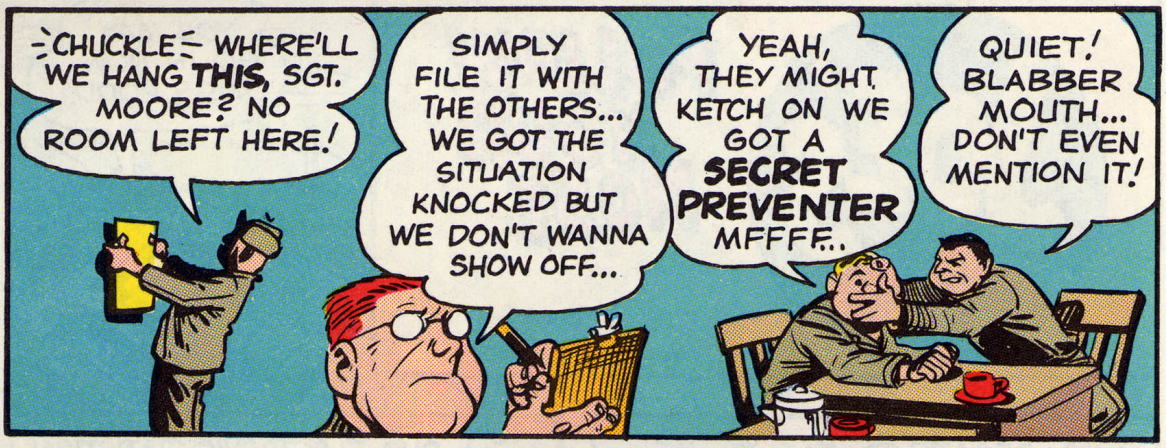
MODIFICATION WORK ORDERS

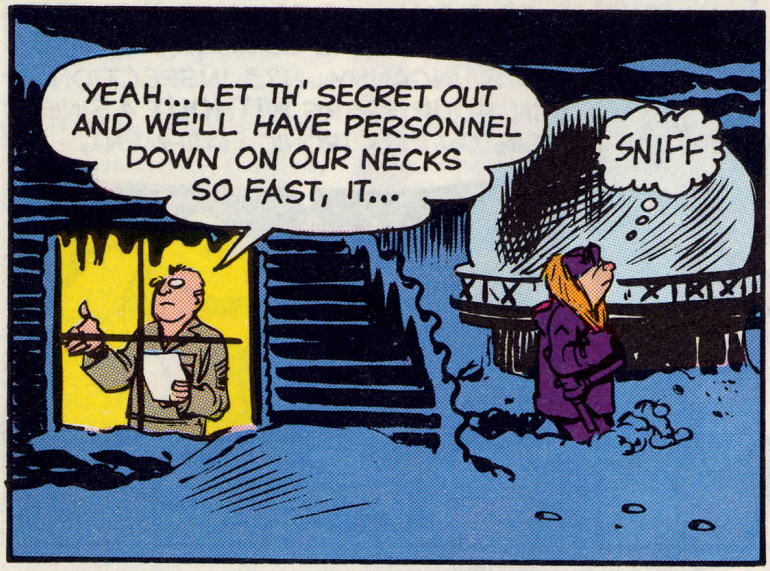
MWO 5-2410-200-35/1 Jan Low Speed, IHC Mod TD 20-200.
MWO 5-2410-203-35/2 Jan Tractor, Full Tracked, Low Speed, IHC Mod TD18-182.
MWO 5-2410-205-35/1 Jan Tractor IHC Mod TD 24-241, to Install Improved Relief Valve in Track Adjusters.
MWO 5-4120-205-35/1 Jan Air Conditioner: Floor Mtd; 18,000 BTU, Acme Precision Products MDLS.
MWO 5-4210-202-25/2 Jan Trk, Fire Fighting, Walter Motor Trk Mod MF Modify Steering System.
MWO 5-6115-232-35/1 Jan Gen Set, Gas Engine—10 KW, AC, 120V.
MWO 9-2300-224-20/4 Dec Carrier, Personnel, Armored M113 Repl Air Cleaner Latches.
MWO 9-2320-218-20/4 Dec Trk Utility, M151, Btry Box Cover.
MWO 9-2320-225-20/1 Dec Trk M422, Blackout Receptacle.
MWO 10-1670-214-20/1 Jan Parachute, Troop Chest: Add Safety Pin, Lanyard to Pack.

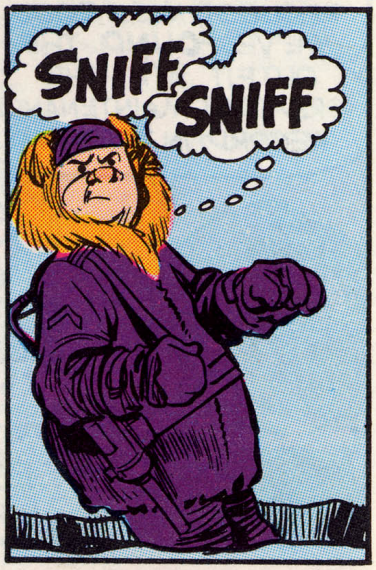
MISCELLANEOUS

AR 58-1 Jan Joint Procedure Management Administrative Use Vehicles.
AR 750-16 Jan Maint of TC Amphibs.
DA Form 10-42 Nov Log Record.
DD Form 110-1 Dec Vehicle and Equip Op Rec Admin Use.
DD Form 1358 Dec Operator's Inspection Guide and Trouble Report.
DD Form 1360, 1361, 1362 Dec Administrative Use Motor Vehicles.
SB 3-30-1 Jan Ammo Serviceability.
SB 9-205 Dec Trk, M38A1 and M170 Interchangeability of Hot Water Heater.
SM 10-C84C-SL Feb Clothing and Textile Material—Shock List.
SM 11-4-5180-521 Oct Tool Kit, Electronic Equip, TK100/G.
SM 55-4-5180-507 Jan Tool Kit (LARC) Set No. 1.
TB ENG 364 Jan Serviceability of Gears.
TB ORD 1035 Jan Ord Vehicles: Disconnect and Connect Btry Cables.


JOE'S DOPE
FOLLOW YOUR NOSE
YOU MAY GO IN NOW, MISS RODD...
WITH REGARD TO YOUR REQUEST, MISS RODD, WE'VE FOUND THE OUTFIT WITH THE GREATEST MAINTENANCE RECORD IN THE ARMY!
AT LAST!! WHO...??
WELL OUR ELECTRONIC STATISTICAL SELECTOR HAS COME UP WITH THE 4039TH SIGNAL COMPANY'S HISTORY. IT'S UNCANNY...873 INSPECTIONS IN FOUR YEARS WITHOUT A SINGLE GIG ON ELECTRONIC EQUIPMENT.
EXCELLENT! THAT'S JUST THE OUTFIT OUR MAGAZINE'S BEEN LOOKING FOR...THANKS!
...A PLEASURE! WE'LL ALL BE INTERESTED IN LEARNING THEIR SECRET!!
AND SO..
HA HA HA...ANOTHER UNIT COMMENDATION FOR EXCELLENCE IN PREVENTIVE MAINTENANCE!

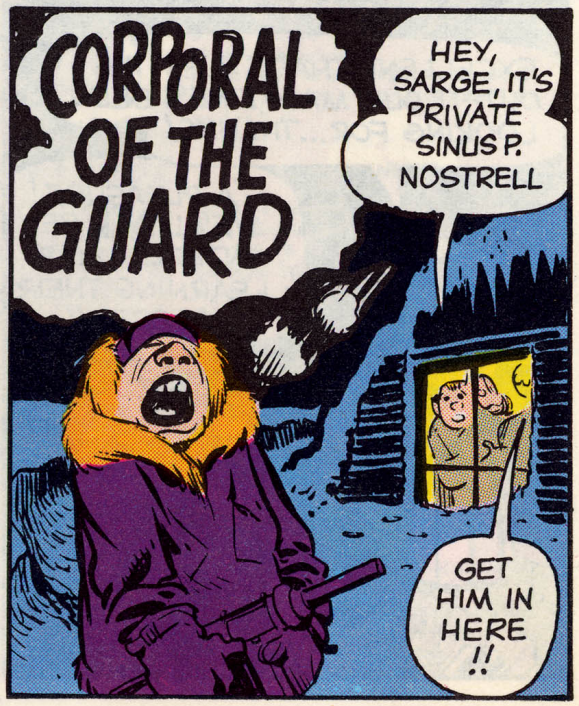

=CHUCKLE= WHERE'LL WE HANG THIS, SGT. MOORE? NO ROOM LEFT HERE!
SIMPLY FILE IT WITH THE OTHERS... WE GOT THE SITUATION KNOCKED BUT WE DON'T WANNA SHOW OFF...
YEAH, THEY MIGHT KETCH ON WE GOT A SECRET PREVENTER MFFFF...
QUIET! BLABBER MOUTH... DON'T EVEN MENTION IT!

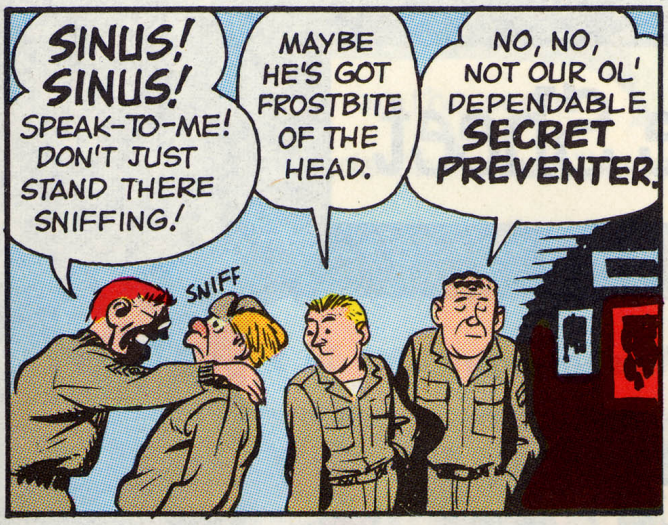

YEAH... LET TH' SECRET OUT AND WE'LL HAVE PERSONNEL DOWN ON OUR NECKS SO FAST, IT...
SNIFF


SNIFF SNIFF

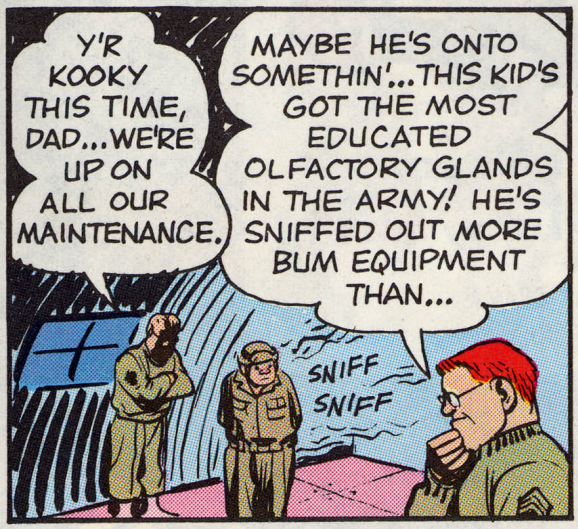
SNIFF SNIFF SNIFF

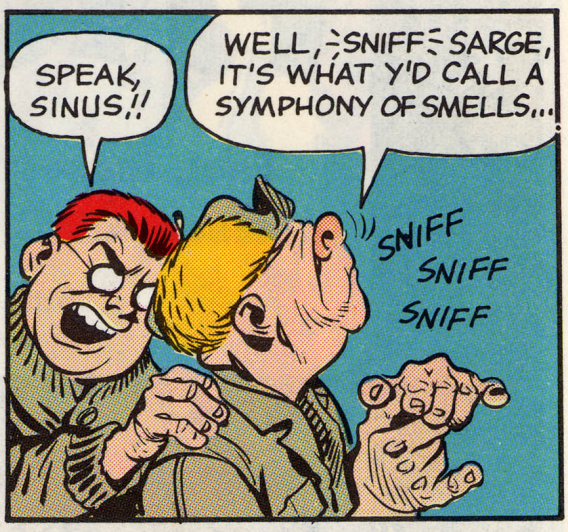
SNIFF

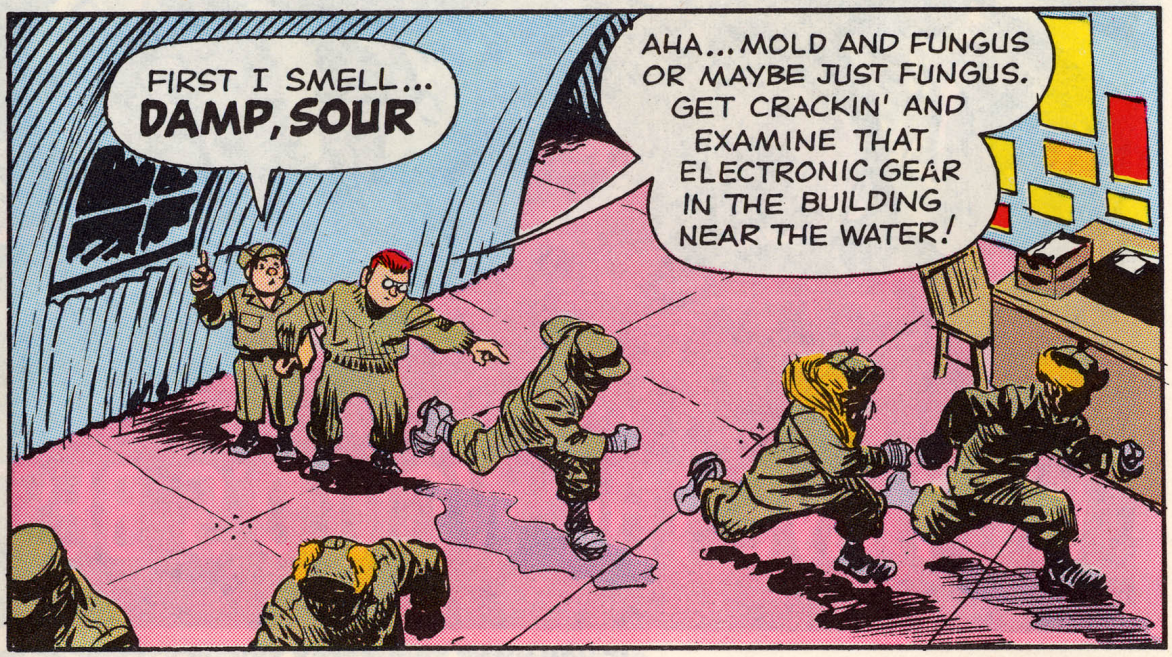

CORPORAL OF THE GUARD
HEY, SARGE, IT'S PRIVATE SINUS P. NOSTRELL
GET HIM IN HERE !!


SINUS! SINUS! SPEAK-TO-ME! DON'T JUST STAND THERE SNIFFING!
MAYBE HE'S GOT FROSTBITE OF THE HEAD.
NO, NO, NOT OUR OL' DEPENDABLE SECRET PREVENTER.
SNIFF

HE'S NEVER FAILED US BEFORE... NOW HOLD YOUR BREATH, SINUS, AND SPILL IT.
I SMELL SOME-THIN'!
SNIF
SNIF


Y'R KOOKY THIS TIME, DAD... WE'RE UP ON ALL OUR MAINTENANCE.
MAYBE HE'S ONTO SOMETHIN'... THIS KID'S GOT THE MOST EDUCATED OLFACTORY GLANDS IN THE ARMY! HE'S SNIFFED OUT MORE BUM EQUIPMENT THAN...
SNIFF SNIFF


SPEAK, SINUS!!
WELL, SNIFF SARGE, IT'S WHAT Y'D CALL A SYMPHONY OF SMELLS...
SNIFF SNIFF SNIFF


FIRST I SMELL... DAMP, SOUR
AHA... MOLD AND FUNGUS OR MAYBE JUST FUNGUS. GET CRACKIN' AND EXAMINE THAT ELECTRONIC GEAR IN THE BUILDING NEAR THE WATER!

JOE'S Dope Sheet

Presenting

FITCALS

Feel, Inspect, Tighten,
Clean, Adjust, Lube, Smell

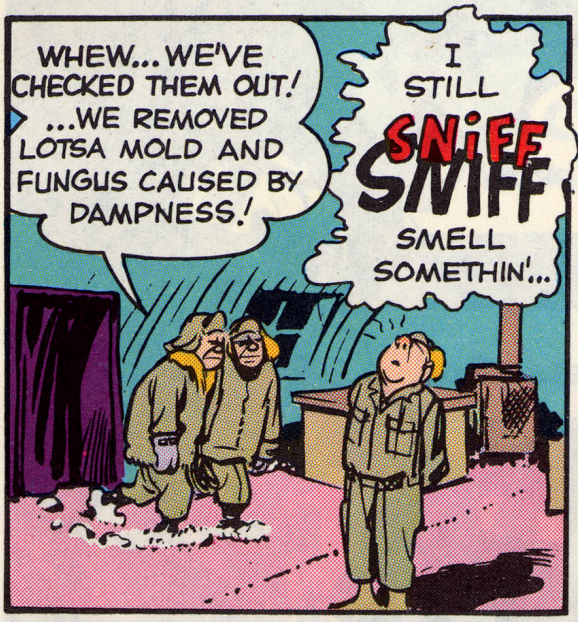
A
SEVEN-PART DRAMA
OF MAINTENANCE

WE HAVE THE WORLD'S BEST E

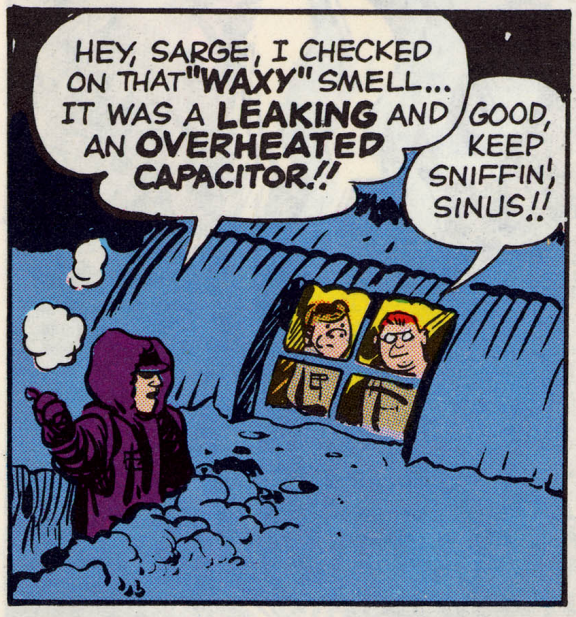
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BU

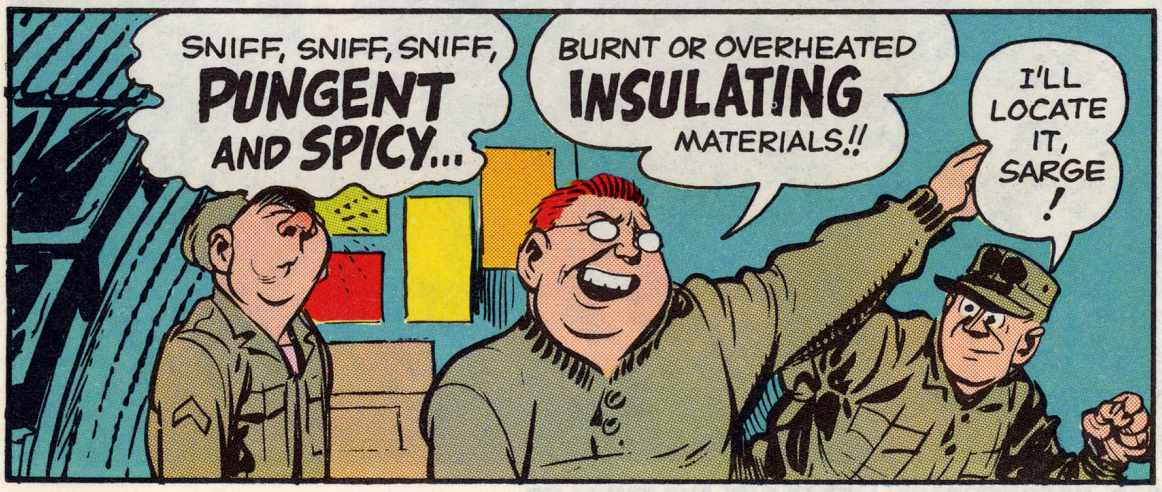
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

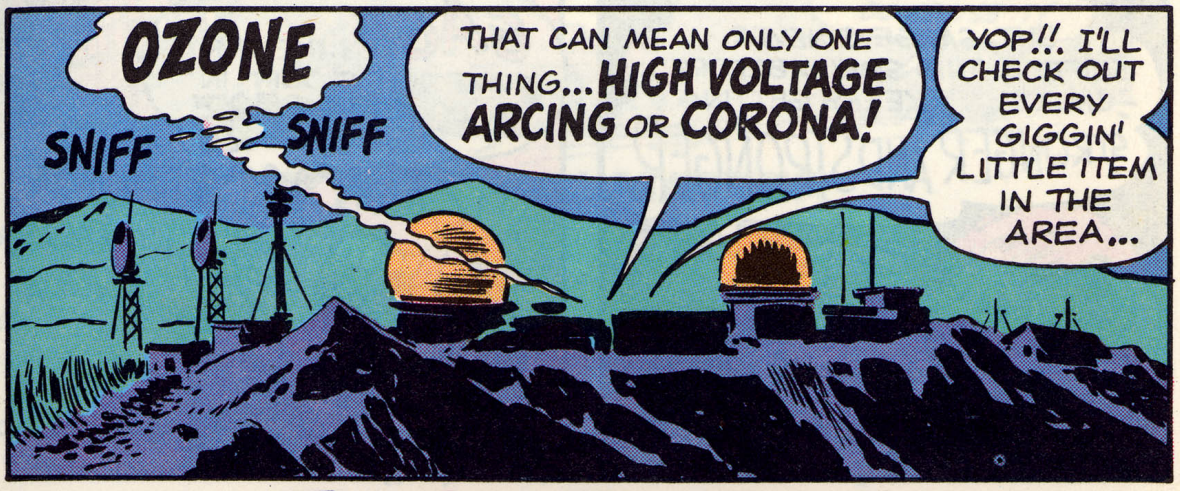
LLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

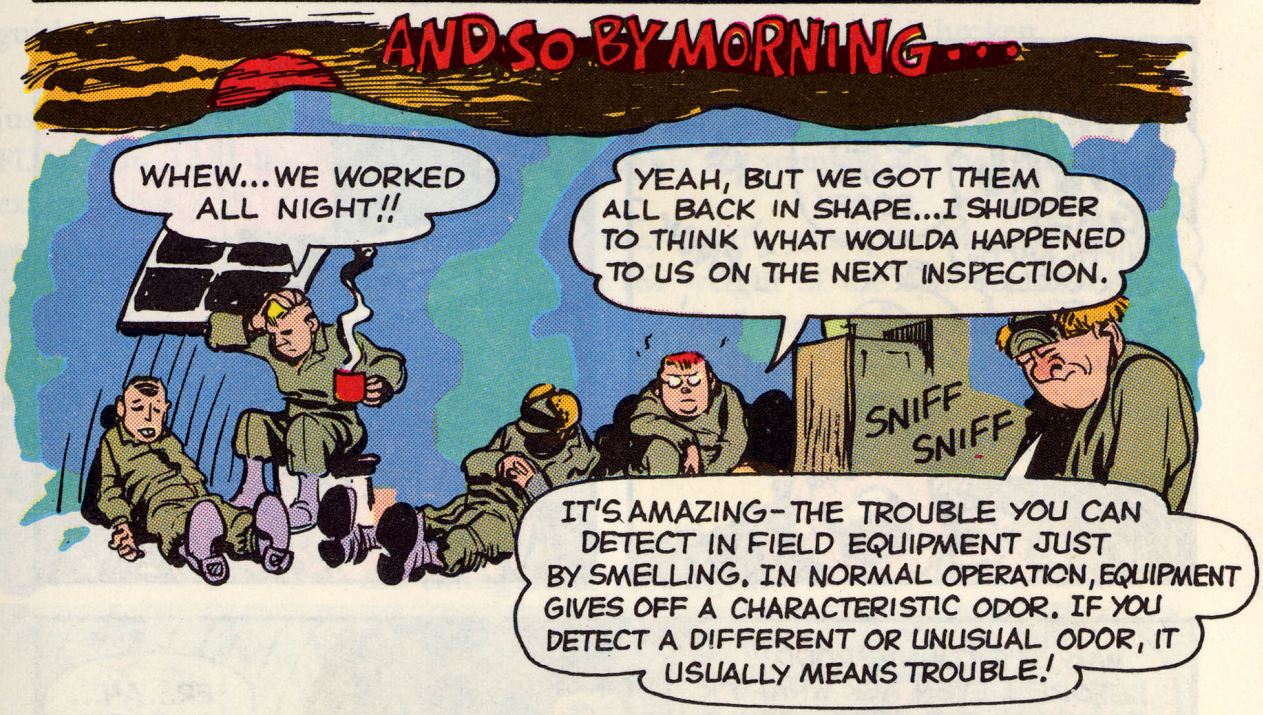


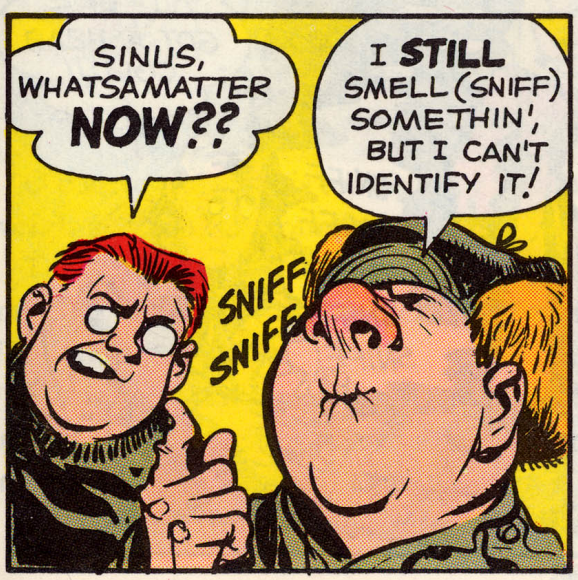
*FEEL, INSPECT, TIGHTEN—CLEAN, ADJUST, LUBE.

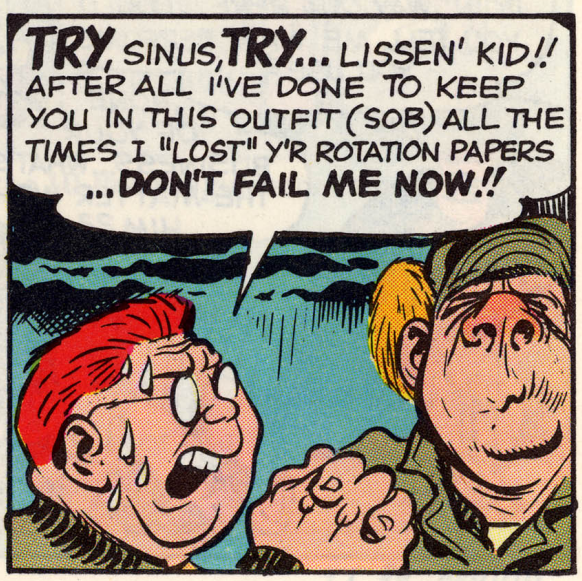


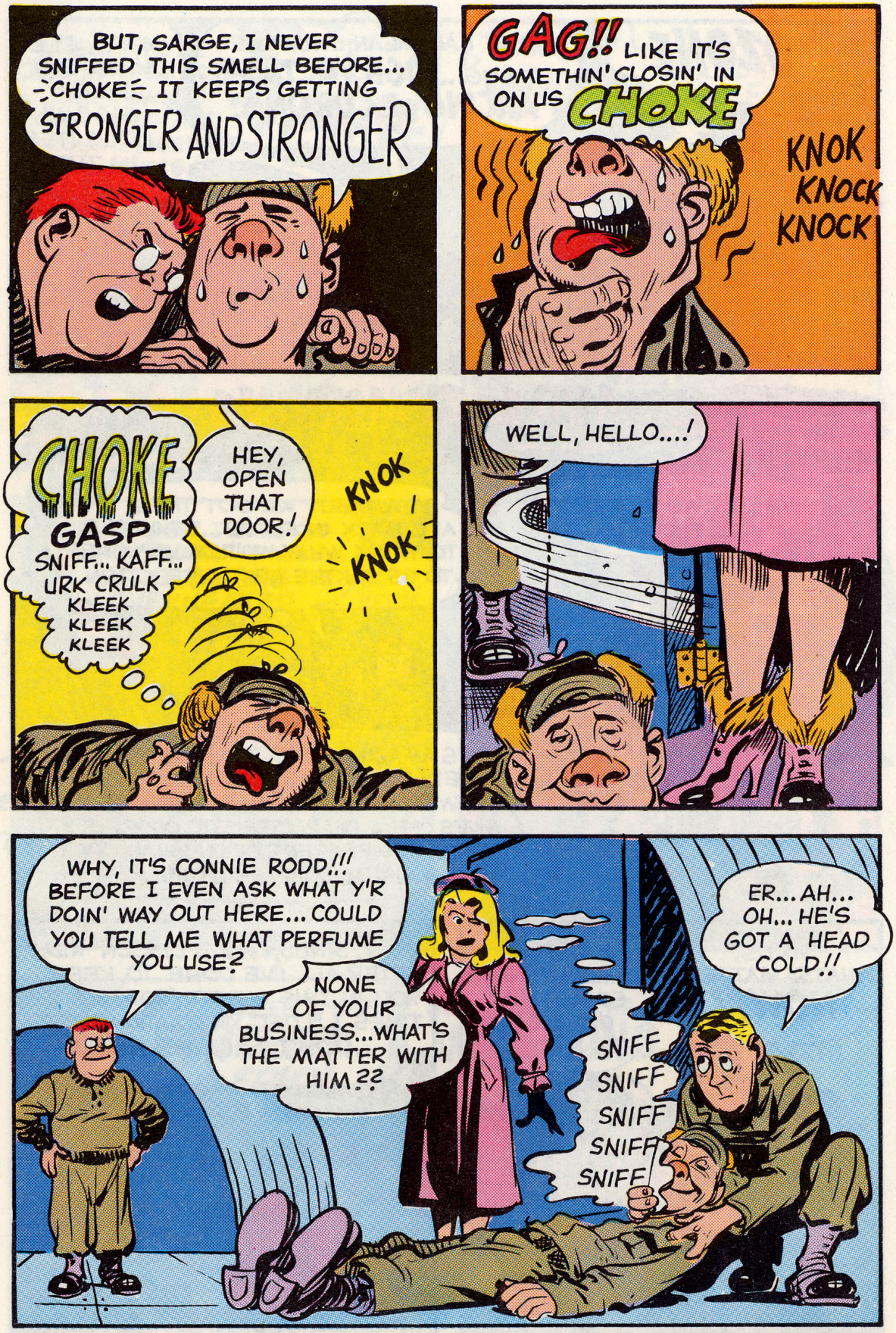


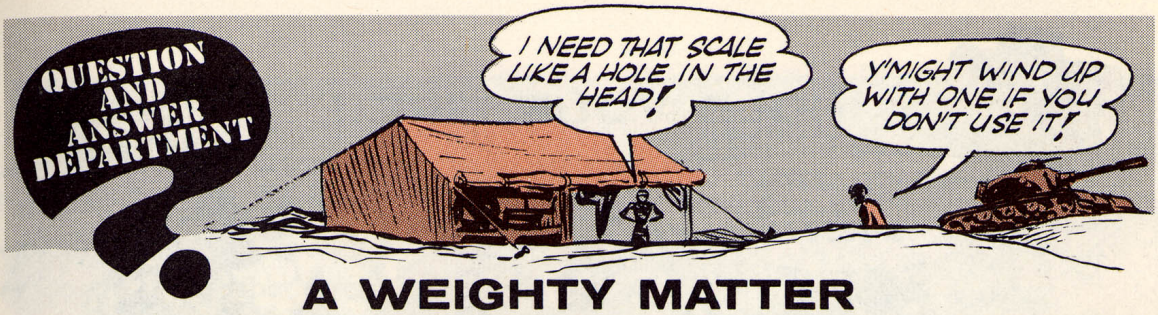

OZONE
SNIFF
SNIFF
THAT CAN MEAN ONLY ONE THING...HIGH VOLTAGE ARCING OR CORONA!
YOP!!. I'LL CHECK OUT EVERY GIGGIN' LITTLE ITEM IN THE AREA...


AND SO BY MORNING...
WHEW...WE WORKED ALL NIGHT!!
YEAH, BUT WE GOT THEM ALL BACK IN SHAPE...I SHUDDER TO THINK WHAT WOULDA HAPPENED TO US ON THE NEXT INSPECTION.
SNIFF
SNIFF
IT'S AMAZING-THE TROUBLE YOU CAN DETECT IN FIELD EQUIPMENT JUST BY SMELLING. IN NORMAL OPERATION, EQUIPMENT GIVES OFF A CHARACTERISTIC ODOR. IF YOU DETECT A DIFFERENT OR UNUSUAL ODOR, IT USUALLY MEANS TROUBLE!


SINUS, WHATSAMATTER NOW??
I STILL SMELL (SNIFF) SOMETHIN', BUT I CAN'T IDENTIFY IT!
SNIFF
SNIFF


TRY, SINUS, TRY... LISSEN' KID!! AFTER ALL I'VE DONE TO KEEP YOU IN THIS OUTFIT (SOB) ALL THE TIMES I "LOST" Y'R ROTATION PAPERS ...DON'T FAIL ME NOW!!


BUT, SARGE, I NEVER SNIFFED THIS SMELL BEFORE... =CHOKE= IT KEEPS GETTING STRONGER AND STRONGER
GAG!! LIKE IT'S SOMETHIN' CLOSIN' IN ON US CHOKE
KNOK KNOCK KNOCK
CHOKE GASP SNIFF... KAFF... URK CRULK KLEEK KLEEK KLEEK
HEY, OPEN THAT DOOR!
KNOK KNOK
WELL, HELLO....!
WHY, IT'S CONNIE RODD!!! BEFORE I EVEN ASK WHAT Y'R DOIN' WAY OUT HERE... COULD YOU TELL ME WHAT PERFUME YOU USE?
NONE OF YOUR BUSINESS...WHAT'S THE MATTER WITH HIM??
SNIFF SNIFF SNIFF SNIFF SNIFF
ER... AH... OH... HE'S GOT A HEAD COLD!!



A WEIGHTY MATTER

Dear Half-Mast,

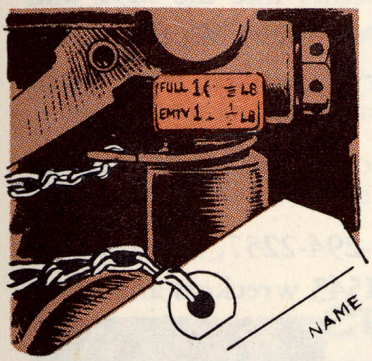
I can't figure out any use for the 20-lb scale in the 2nd echelon. No. 2 Common Tool Set. I've asked a couple people and they don't know either. Could you help us out?

SFC H. H.

Dear Sergeant H. H.,

The scale is used to weigh your combat vehicles' CO_2 portable fire extinguishers every three months or wherever an extinguisher seal is broken.

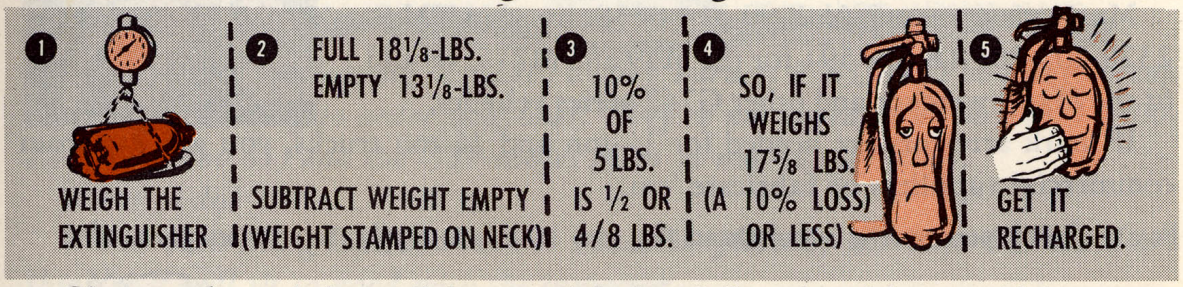
It goes by FSN 6670-164-0560 and can weigh up to 20 pounds. This makes it just right for the so-called "5-lb extinguishers" which weigh about 18⅛-lbs FULL and 13⅛-lbs EMPTY. (These weights are stamped on the neck of the extinguisher.)



Using your scale, weight your portable extinguisher "as is." Subtract the weight of the cylinder EMPTY—remember, you will find that figure stamped on the cylinder.

Subtracting the EMPTY weight of the cylinder from the total weight gives you the weight of the contents —but natch!

If the contents are "light" by 10 per cent or more, have the extinguisher recharged.



O'course the scale is too light to weigh the 10-lb extinguishers—which actually weigh about 32⅝ pounds.

To weigh these 10-lb fixed extinguishers you will need a scale with more muscles. The scale, dial indicating 0 to 40 lb, will do the trick and it goes under FSN 6670-164-0564.

In case you can't get it, any good scale that will take 40 pounds or over will do. In some companies the mess sergeant may have one or you might borrow a scale from some post activity to weigh your 10-lb extinguishers.

Remember, this weighing deal applies only to CO_2 type extinguishers.

Half-Mast

Dear Half-Mast,

We have to use our tactical trucks, including wreckers, in the ammunition storage area. And most of these vehicles are not equipped with spark arrestor mufflers.

Where can we get spark arrestors to put on when needed . . . for the trucks used in the ammo area?

We need FSN's and the scoop on how to requisition this equipment.

Capt J. J. K.

Dear Captain J. J. K.,

A few tactical vehicles come equipped with spark arrestor mufflers, Sir. But these are mostly gas tankers like the M49 or truck tractors like the M52 and M275 (used to tow tanker semitrailer) and truck tractor wreckers like the M246.

All of the G749-series GMC 2½-tonners are factory equipped with spark arrestor mufflers.

For the other tactical trucks, your command can authorize the spark arrestor mufflers if they're needed.

Muffler, exhaust, flame and spark arrestor, FSN 2990-294-2257, listed in TM 9-2320-211-20P (14 Jan 59), should fit the M62 and M543 wreckers and other G744-series vehicles.

Muffler, exhaust, FSN 2990-314-0738, listed in TM 9-2320-209-20P (8 Apr 59) for the M49 and M275, should fit the M108 wrecker and other G742-series vehicles.

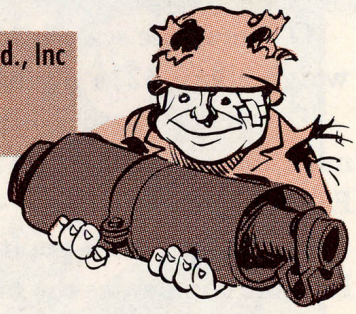
If spark arrestors are needed for ¼-ton and ¾-ton trucks, you get 'em from commercial suppliers or fabricate 'em.

Here's a list of spark arrestor manufacturers that may be able to supply the arrestors you need:

Mar Pro, Inc
Maremont Muffler Div
168 N. Michigan Ave
Chicago, Ill

Erickson Products Co
1960 Carroll Ave
San Francisco 24, Calif

Alexander Tagg Ind., Inc
Jacksonville Rd
Hatboro, Penna

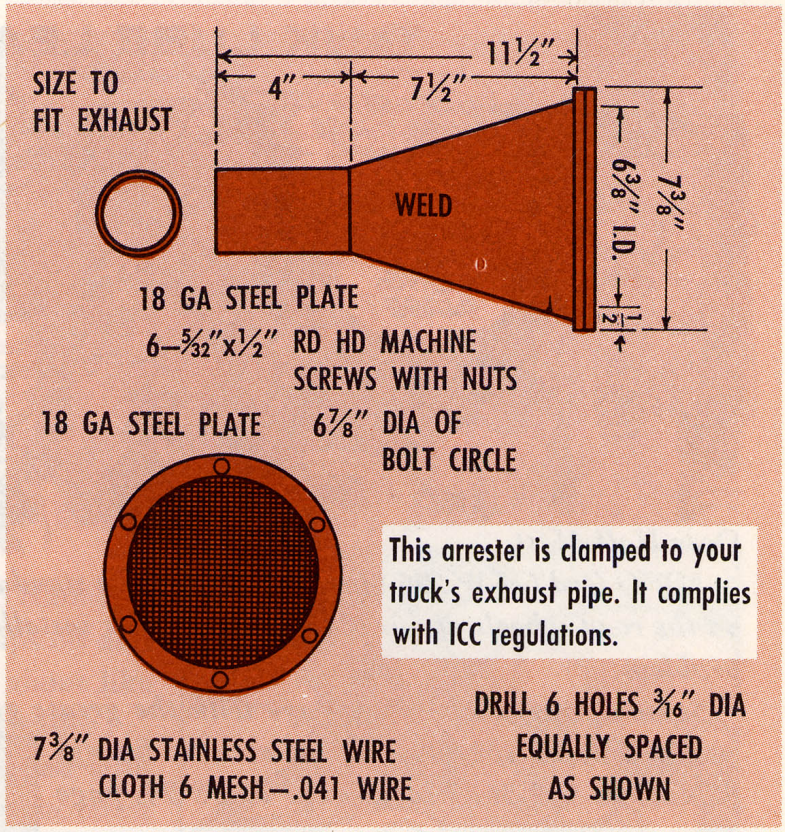


Protectoseal Co
1914 S. Western Ave
Chicago 8, Ill

Air Maze Corp
25000 Miles Ave
Cleveland 28, Ohio

Maybe you only make a trip now and then into the danger area. In that case you may be able to fabricate an arrestor that'll take less of a bite out of your outfit's funds. Here're general dimensions for a fabricated arrestor you can make and use if your command OK's it.

Remember, tho, the gadget you're making's supposed to keep you from frying your carcass. So make sure it won't let flame or sparks get thru.



And keep in mind that you need spark arrestors only in storage areas where there's material with a low flash point. When you're handling ammo, you'll find the rules in TM 9-1903 (31 Oct 56) and its changes, especially paras 70b and 15i.

Half-Mast

CLIPS FOR M113 APC

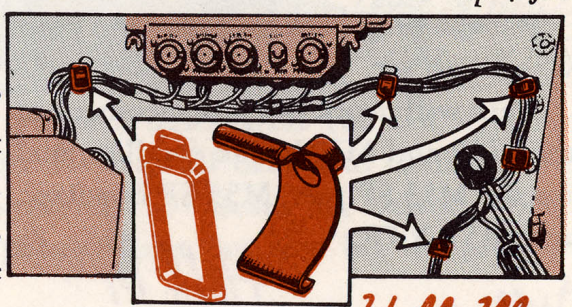
Dear Half-Mast,

We are taking a clipping on CLIP, wiring harness 8763397. The things break and we got no way to order new ones. They're not listed at all in TM 9-2300-224-20P (Nov 61) and the -35P shows them as non-supply items.

What to do?

We've been using tape and rubber bands in place of the clips but we don't think that will sit so good with the inspector.

Sp-4 J. R.

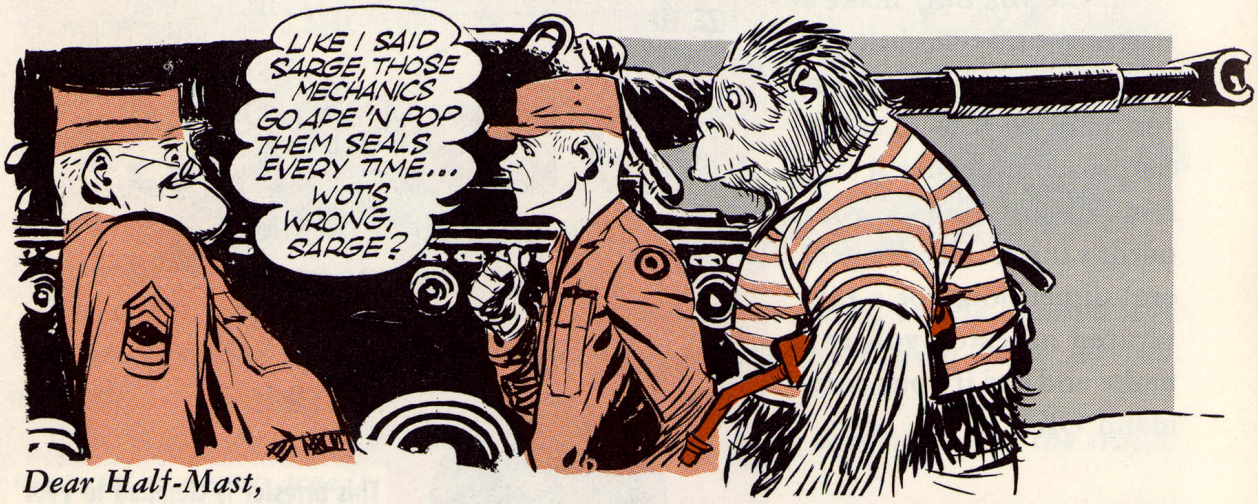


Dear Specialist J. R.,

The clips are not listed in the -20P because of an oversight but you can get them through normal supply channels. Just ask for FSN 2590-829-6781, Cradle, wiring harness, Clip . . . they're an authorized item for all -20P users.

Half-Mast

TANK LUBE LEAKS



Dear Half-Mast,

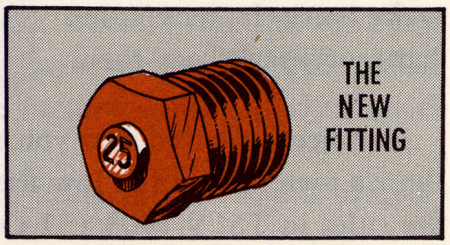
MWO Ord G1-W106 (Jan 58) called for a standard lube fitting and a bushing on the road wheels of our M48A2 tanks. We installed them but we've still got a problem.

Some of our mechanics go ape with the grease gun and pop the hub seals.

We ordered the pressure relief lube fittings FSN 4730-542-5683 mentioned in PS 94, page 11.

Is there any way we can save our seals until the new lube fittings get here?

Sgt J. H. M.



Dear Sergeant J. H. M.,

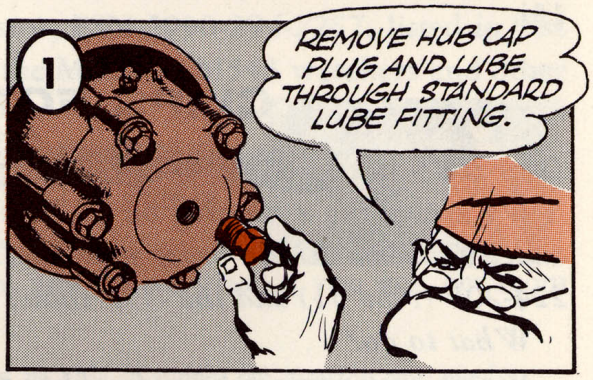
The only right way is to replace the standard lube fittings with the 15-25 PSI pressure relief fittings you ordered.

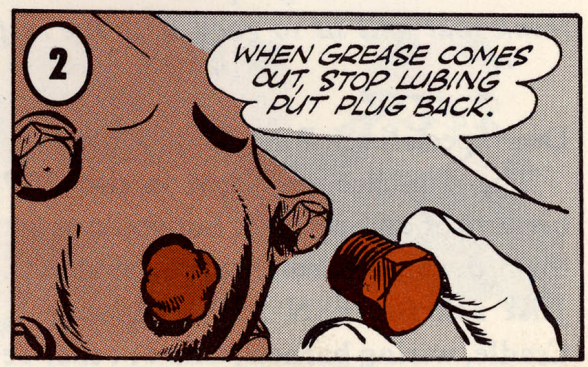
But, strictly as an emergency measure, here is what you can do until the fittings arrive. Remove the hub cap plug. Lube the wheel through the standard lube fitting, but when grease starts coming out at the hub cap plug hole, stop lubing.

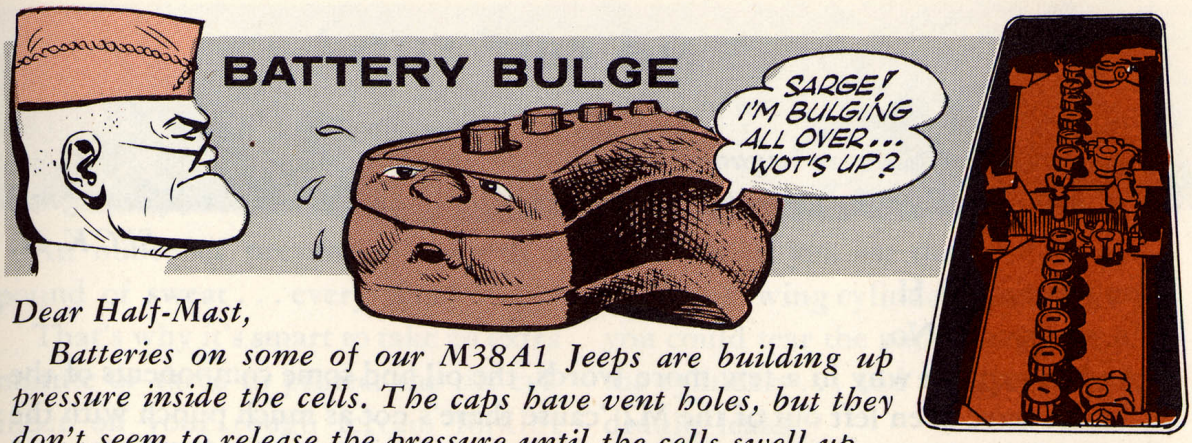
Put the plug back in again and your wheel's all set.

This will work for all members of the M48 and M103 tank families, and for the M53 SP gun, M55 SP howitzer, and M51 VTR.

Half-Mast







Dear Half-Mast,

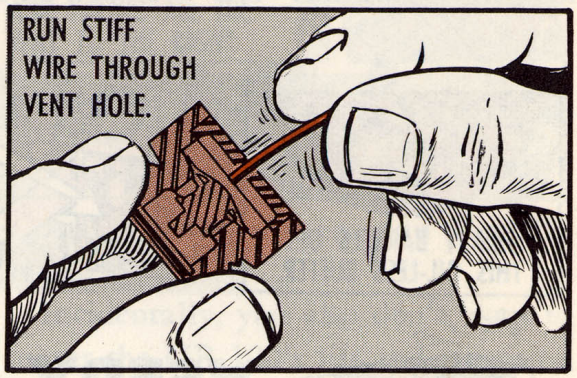
Batteries on some of our M38A1 Jeeps are building up pressure inside the cells. The caps have vent holes, but they don't seem to release the pressure until the cells swell up.

Got any ideas about the cause of this battery bulge?

Sp5 J. A. S.

Dear Specialist J. A. S.,

The first thing to check, o'course, is those vent holes. Take the caps off and run a stiff wire through . . . about like you would with a pipe-stem cleaner . . . to make sure they're not clogged with dust or other gook. You'll find the latest word on this in paras 20d and 42c of TM 9-6140-200-15 (23 Jul 58).



If the battery's bulging with its vent holes open, here are some possible causes:

Battery box drain holes and vents may be sealed so the battery can't breathe.

The voltage regulator may be set too high. A test at the positive output terminal of the regulator should show the voltage at, but not above 28.5 volts with some generator load to stabilize the voltage regulator. Turning on the lights should do it. If your regulator output's more than 29 volts, heat from excess charging may cause the battery to bulge.

Battery cells may have swelled because—

1. **Electrolyte specific gravity ran low in freezing weather. Check your vehicle TM or TM 9-6140-200-15 for the right specific gravity.**
2. **The electrolyte level may have dropped below the top of the cell plates.**

Anyway, if you have this condition, fire off a quick UER (or EIR if you're under the New Equipment Record System) with all details to Commanding General, Ordnance Tank-Automotive Command, 1501 Beard St., Detroit, Mich., ATTN: ORDMC-FM. This'll let those people figure out how big the problem is and what causes it.

Half-Mast

NO OIL

Dear Half-Mast,

How about settling an argument?

Do you put oil in the oil buffer of the M2 .50-cal heavy barrel machine gun?

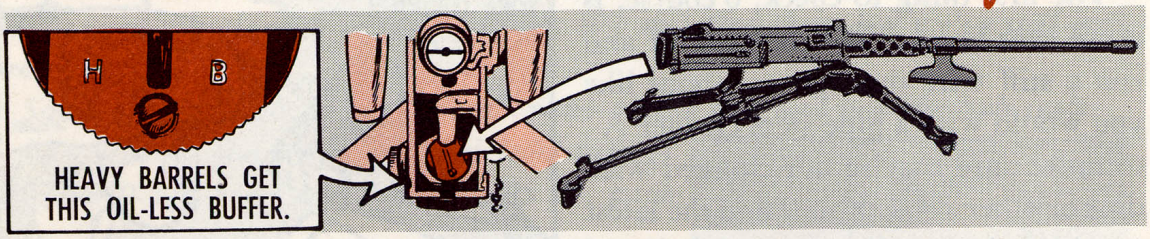
SFC K. H.

Dear Sergeant K. H.,

In one word: No.

And to explain why in a few more words, the oil and some components of the oil buffer have been left out of the M2 'cause there's not as much punch with the recoil as there is with the light barrel machine guns that do need the oil. And to make sure the oil-less oil buffer gets attached to heavy barrel machine guns, look for the initials "HB" stamped on the oil buffer tube.

Half-Mast

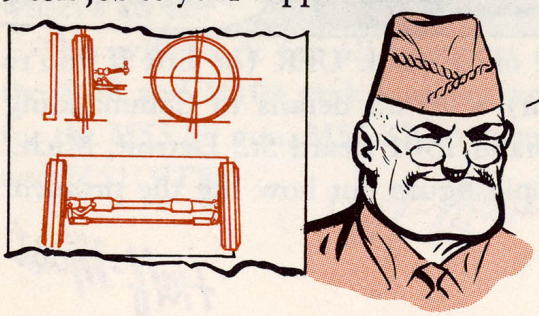


VEERY-STEERY

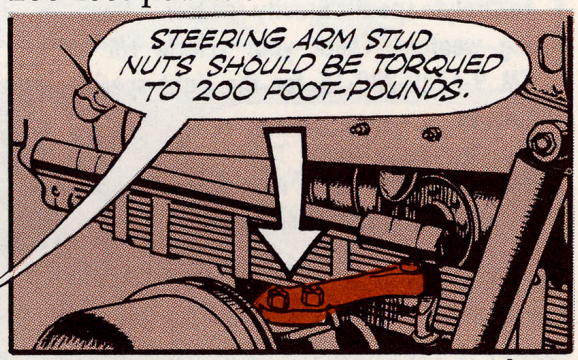
How does your 5-ton G744-series truck steer these days?

Does the power steering try to take you thataway when you want to go this-away? Or do you have doubts about coming out of a turn on time next time? Or is it in any way not right?

If so, then you've got a Big Fat T—for Trouble. Before your steering steers you and your truck into salvage, get that 5-ton job to your support unit.



Let the guys with the gages, calipers and other do-dads give your power steering and front wheel alinement a complete health checkup, including torqueing the steering arm stud nuts to 200 foot-pounds.

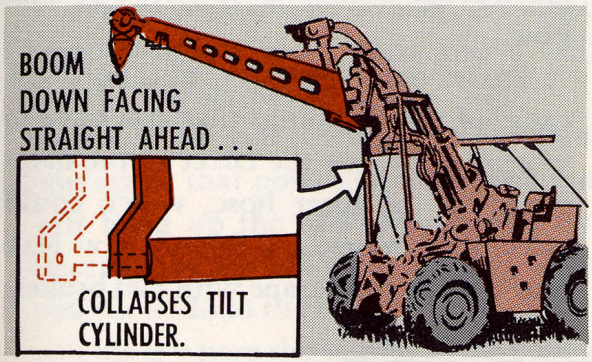


Old age with normal wear could put your steering system on the critical list. Get that checkup today.

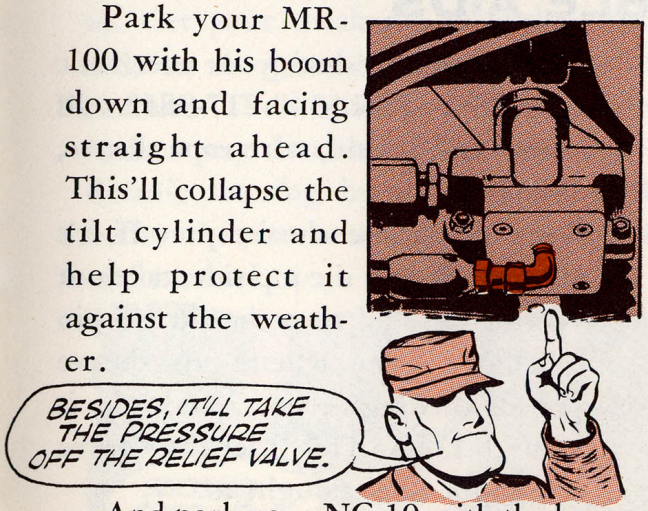
CUT THE SWEAT

An ounce of prevention's worth a pound of sweat . . . every time!

That's why it's smart to take an extra minute or three to protect the tilt cylinder on your rough terrain forklift and the swing cylinder on your NC-10 crane before tucking these vehicles away for a spell.



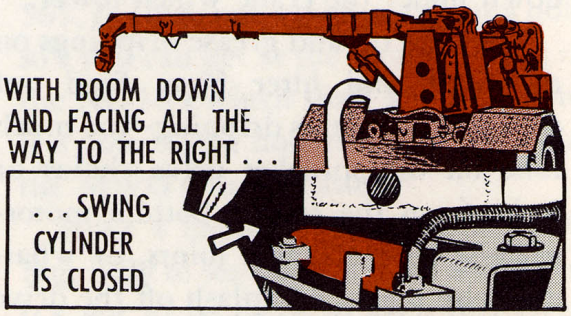
Park your MR-100 with his boom down and facing straight ahead. This'll collapse the tilt cylinder and help protect it against the weather.



And park your NC-10 with the boom down and facing all the way to the right, if you possibly can. This'll close the swing cylinder piston rod so's the weather can't get at it.

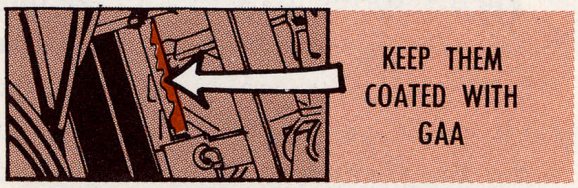
These simple habits'll save you a muscle session with emery cloth or steel wool trying to get the rust off.

'Cause, if you use these cranes when the tilt or swing cylinders are real rusty, you could tear the packing right out of the cylinders . . . and wind up with hydraulic leaks.



And then, brother, you'd really sweat!

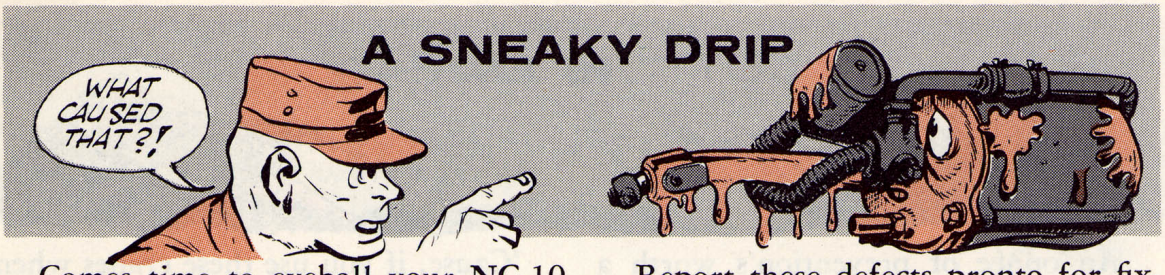
Incidentally, you also don't want to forget the MR-100's lift and extension cylinders when you're using stiff legs. For a long period . . . like for a month or more. Remember, these cylinders are always exposed to the weather then, and less'n you keep 'em coated with GAA you'll end up with another sweat session.



Remember that you want to be sure you wipe the GAA off the hydraulic cylinder piston rods when your MR-100's changed back for use as a forklift truck. Dirt and grit picked up in the GAA could damage the cylinder packing just like a rusty piston rod would.

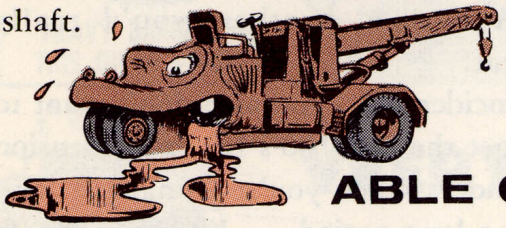
MORE ON THE NC-10 — NEXT PAGE

A SNEAKY DRIP



Comes time to eyeball your NC-10 Federal crane, don't forget to save a minute or three for the vacuum power cylinder (service brake hydrovac) down under the crane winch tower.

Look for oil and grease drippings on the filter and filter hose. Find out what's causing this dripping—too much lube on the sprocket drive chains or leaks from the top or bottom motor-to-hoist control valve joints, or whatever else makes oil splash off the drive shaft.



Report these defects pronto for fixing, **but** don't stop there. Give an extra good look at the hose itself. The dripping can start the rubber to rot, especially around the clamps.

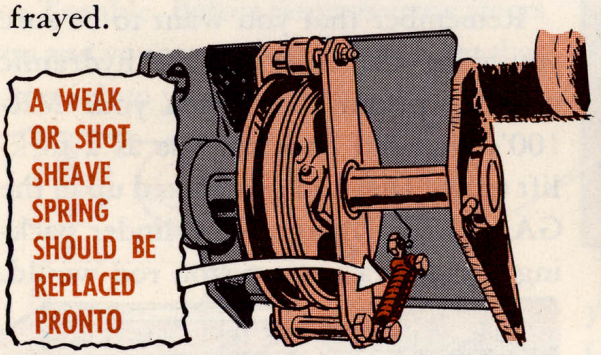
If the hose is shot, tell your mechanic. He can replace it by cutting an 18-in piece from a bulk length of ¾-in ID hose.

Turns out, then, it's not only the cause of the drippings that you have to worry about. It's the effect of the drippings on the filter hose, which could cause even worse trouble—a new leak that'd leave your crane with bad brakes.

ABLE CABLE AIDS

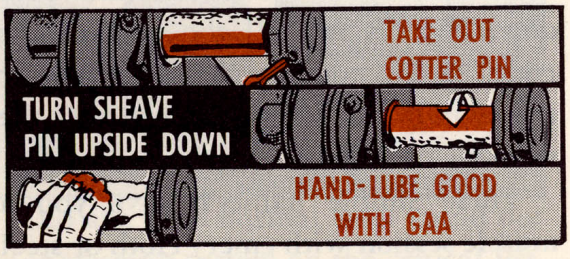
Heads-up operators check the condition of the sheave spring and hoist load cable guide sheave pin on their NC-10 crane every day. Could save a heap of trouble with snarled up cables, etc.

Flip the spring to see that it's holding the sheave guide roller tight against the wire rope. If the spring's too weak, the cable won't spool right. In fact, it could jump the sheave and get caught and frayed.

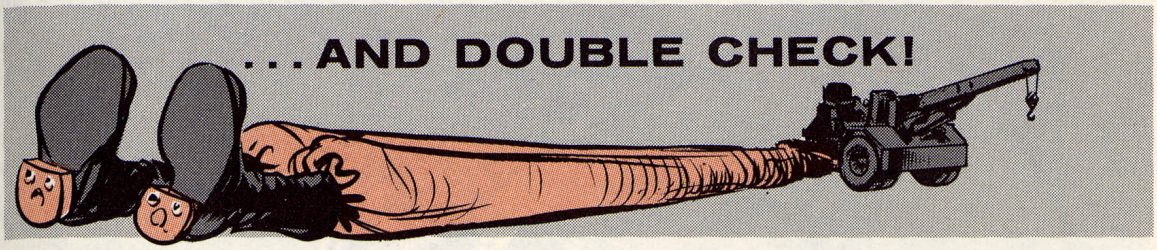


If the spring's shot, your mechanic can replace it. FSN 5340-217-9843 will get one Spring, load, wire rope sheave, from QM.

Next, check the sheave pin. If it's badly corroded on the top side, take out the cotter pin and turn the sheave pin upside down. Then, whether the sheave pin needs turning or not, hand-lube it good with GAA. This'll let the sheave slide smooth like it ought to.



And don't forget to replace the pin.



Don't be half safe or you might end up all sorry!

Even if MWO 10-1694-A1 (17 Jul 56) has been applied to your NC-10 crane, you'd be smart to make sure you have a second check on that powerful hydraulic steering.

The MWO, you remember, provided steering mechanism stops and a bell crank support bracket.

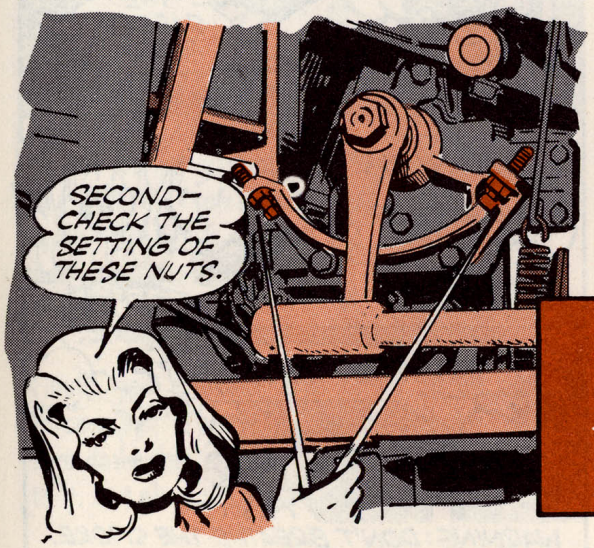
But, less'n you're mighty gentle how you apply that power steering, you can still bang up the MWO stops and the steering linkage. Not to mention what you could do to the load!

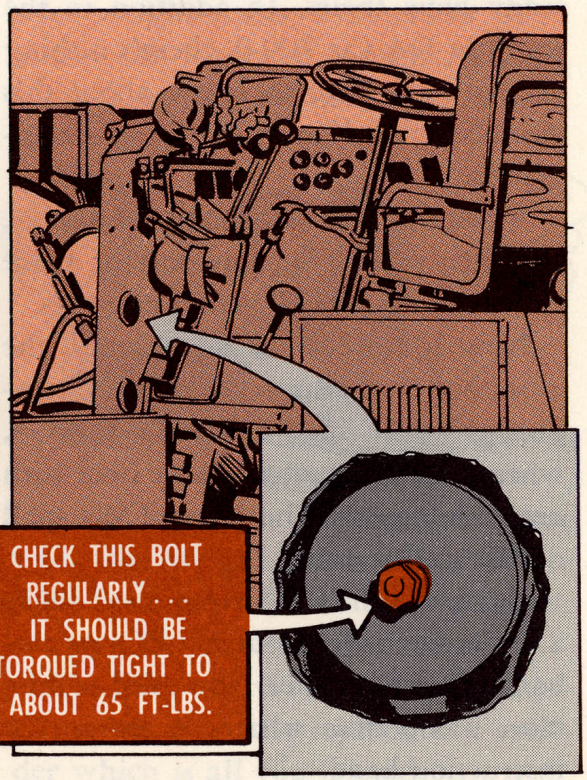
This is where the second check comes in. Get your mechanic to eyeball the nuts on the pitman steering gear arm bracket. These nuts should be set in such a way that they'll cut off the hydraulic steering booster cylinder just before the pitman arm reaches the limit of its travel.

And speaking of MWO's—sometimes installation's only part of the deal. It's the follow-up PM that counts.

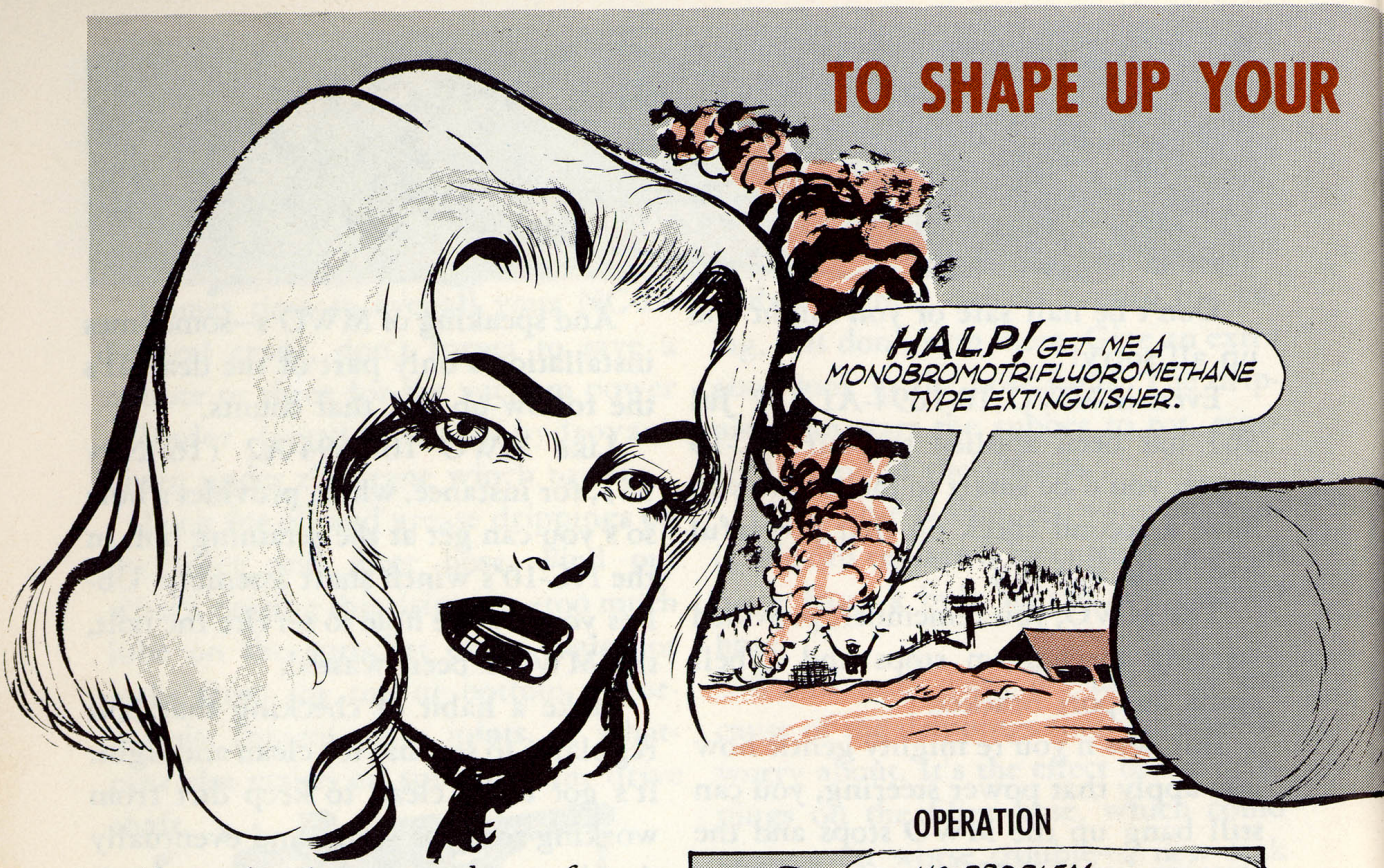
Like MWO 10-1694-A2 (16 Nov 56), for instance, which provides a hole so's you can get at the retaining bolt in the NC-10's winch shaft assembly. Unless you use the hole to service the bolt, the MWO's been wasted.

Make a habit of checking that bolt regularly to see that it's clean and tight. It's got to be clean to keep dirt from working into the shims and eventually the drum shaft. And, since you can't lock it, you should get the nut good and tight . . . torque tight . . . say, about 65 ft-lbs.





TO SHAPE UP YOUR



OPERATION

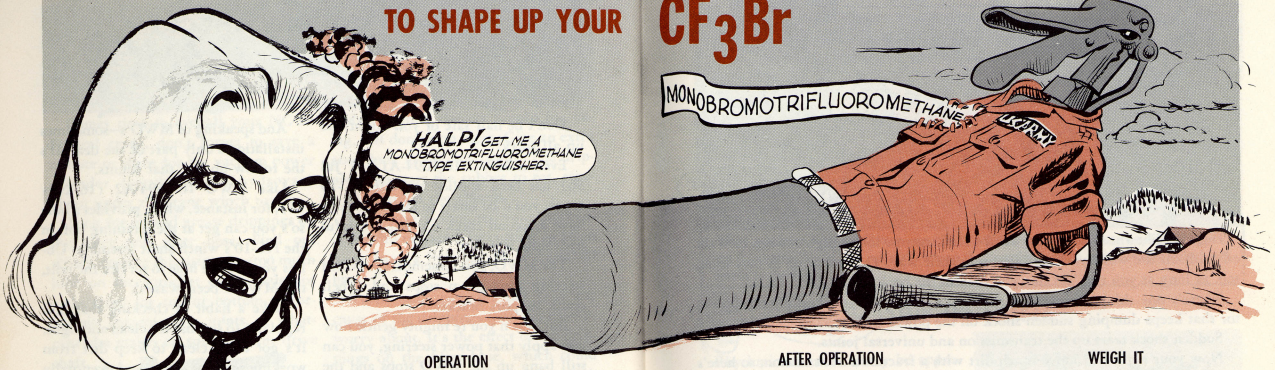
About that long-named new fire extinguisher that you'll be getting in place of certain CO_2 and carbon tet types. Matter of fact, some outfits already have theirs. In addition to the scoop in DA Cir 700-9, there's a thing or two you want to know about this monobromotrifluoromethane extinguisher.

First off, it's an all around fire fighter, You can turn it on any sort of blaze **except** around LOX generating rigs.

Now it's no sweat to maintain the monobromotrifluoromethane extinguisher, FSN 4210-555-8837 (ENG), when it comes as a basic issue item with new equipment. The latest TM's spell out the full routine.

But when the CF_3Br comes in cold as a replacement for your old CO_2 or carbon tet extinguisher, you need a mite more scoop than what you see on the instruction band.

TO SHAPE UP YOUR CF_3Br



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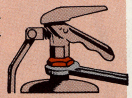
OPERATION

AFTER OPERATION

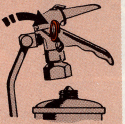
Once used, you need another cylinder.

First you aim the extinguisher off yonder and squeeze off any unspent pressure.

Next you back off the coupling nut enough to remove the used cylinder.



Now, so the trigger can't go off during assembly, you put the safety pin back in the valve and secure it with sealing wire.

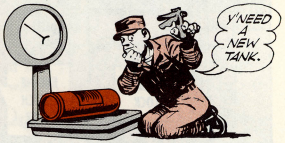


Finally you drip one drop of OE 30 on the threads before you insert the new cylinder and turn down the coupling nut. That's all there is to it. Just place the CF_3Br back into its bracket.

WEIGH IT

The cylinder should be weighed every six months.

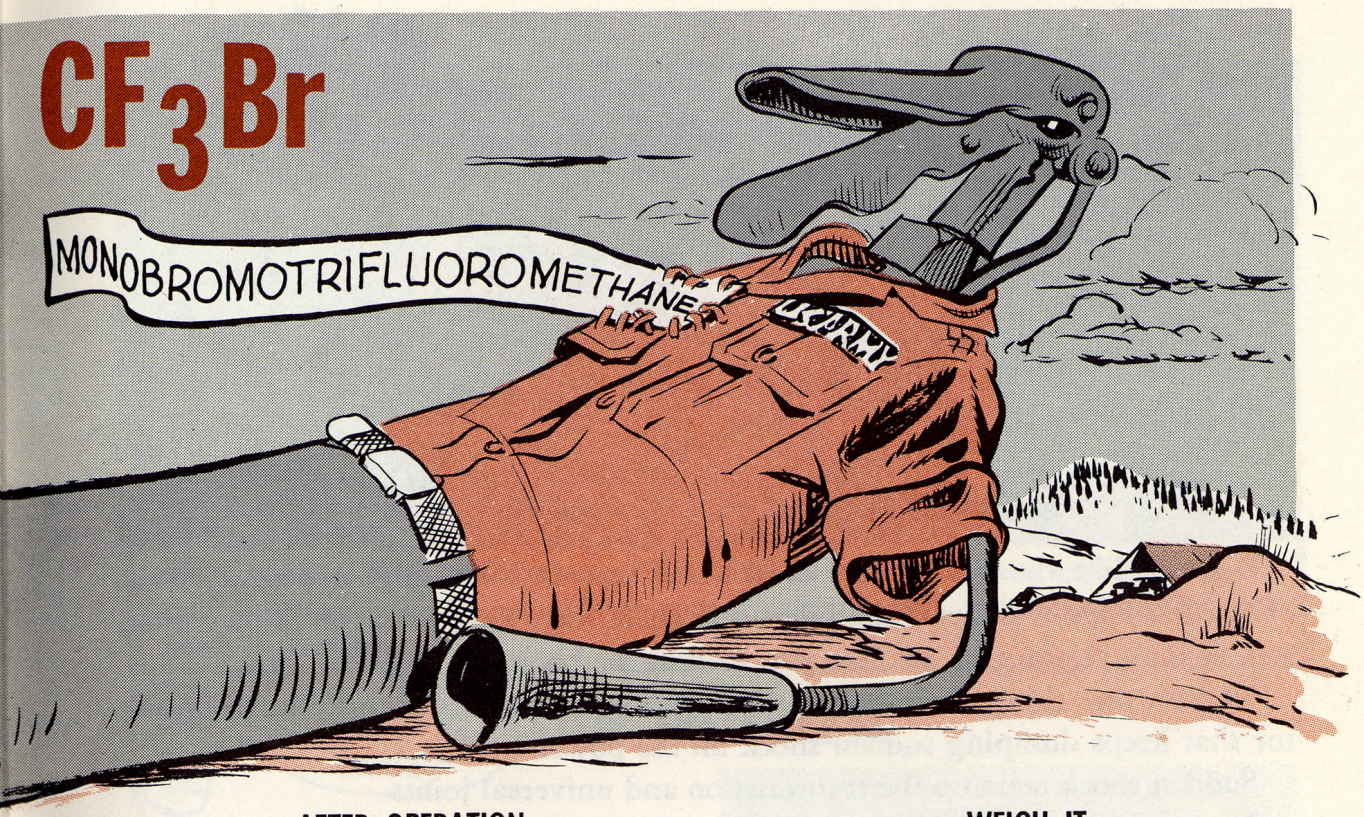
To check the weight, you take off the head assembly first. Then, if your cylinder weight scales 4 ounces or more below the charged weight, figure stamped on the cylinder, you need a new cylinder.



REPLACEMENT

After using the extinguisher . . . or when the weight check shows you're light four or more ounces—requisition a replacement cylinder pronto.

Use FSN 4210-708-0031 (ENG)—this covers just the replacement cylinder which is all you'll need.



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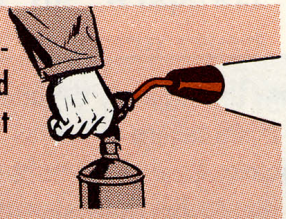
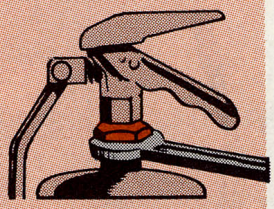
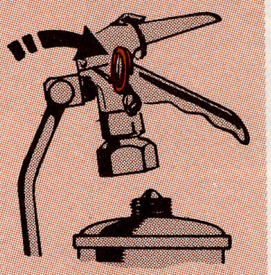


Next you back off the coupling nut enough to remove the used cylinder.



Now, so the trigger can't go off during assembly, you put the safety pin back in the valve and secure it with sealing wire.

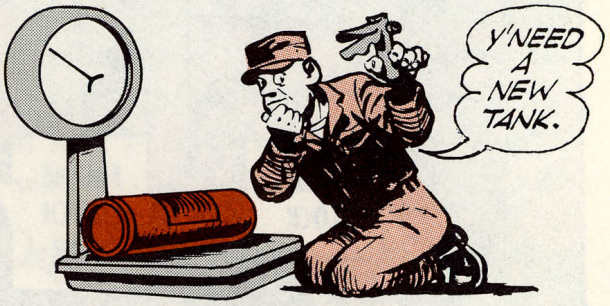


Finally you drip one drop of OE 30 on the threads before you insert the new cylinder and turn down the coupling nut. That's all there is to it. Just place the CF_3Br back into its bracket.

WEIGH IT

The cylinder should be weighed every six months.

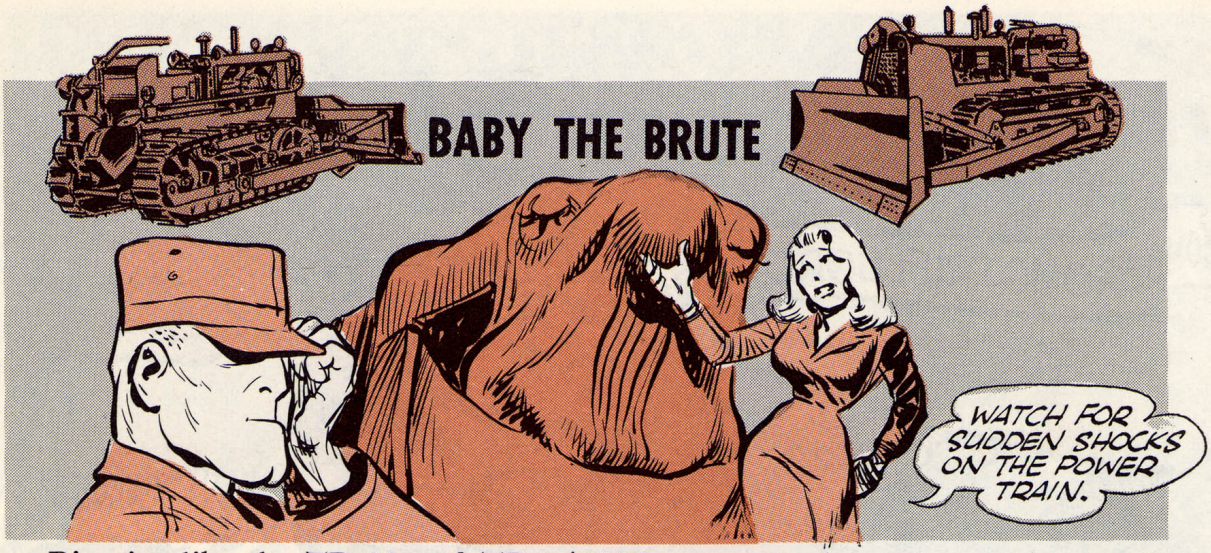
To check the weight, you take off the head assembly first. Then, if your cylinder weight scales 4 ounces or more below the charged weight, figure stamped on the cylinder, you need a new cylinder.



REPLACEMENT

After using the extinguisher . . . or when the weight check shows you're light four or more ounces—requisition a replacement cylinder pronto.

Use FSN 4210-708-0031 (ENG)—this covers just the replacement cylinder which is all you'll need.



Big rigs like the TD-20 and TD-24 IHC tractors look tough enough to walk off with all the work you can pile up in their way. They're tough as they look, too, as long as you run 'em like you read in the book.

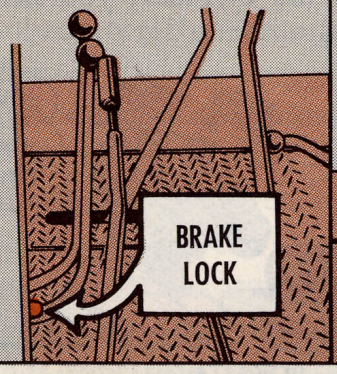
There's one thing, f'rinstance, they can't stand. That's a herky-jerky operator that keeps dumping sudden shock on the power train.

Sudden shock tears up the transmission and universal joints.

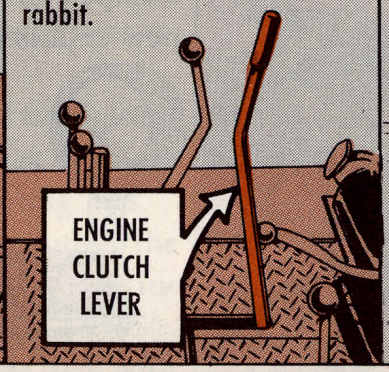
Now your rig won't move much dirt with a fractured transmission, so here's a number of times when you want to avoid that sudden shock on the power train.

ON THE TD-20 AND THE TD-24—

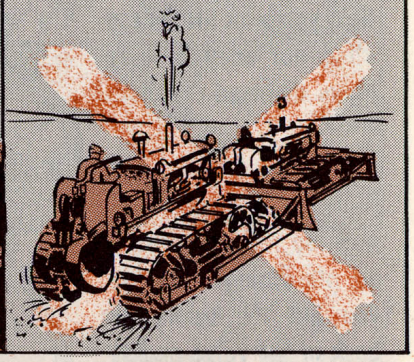
When foot brakes are locked—you don't move the rig one inch before you release those brakes.



When you engage the engine clutch—you ease it into engagement like a hot potato. None of that bang-bang routine like a rabbit.



When your engine won't start—you fix it, or slave it. But no pushee, no pullee the tractor to start the engine—ever, ever.

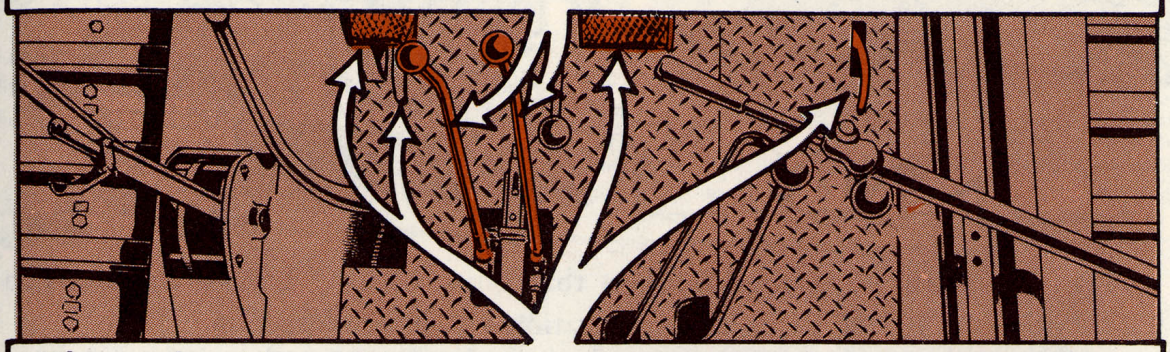


When you reverse direction—you brake the rig to a full, dead, total stop. You want no motion either way when shifting from forward to reverse, or vicy versy.

When tracks are frozen to the ground—you don't budge before you break those tracks loose with a bar, or torch. You won't have this problem in the first place, if you park your rig on planks.

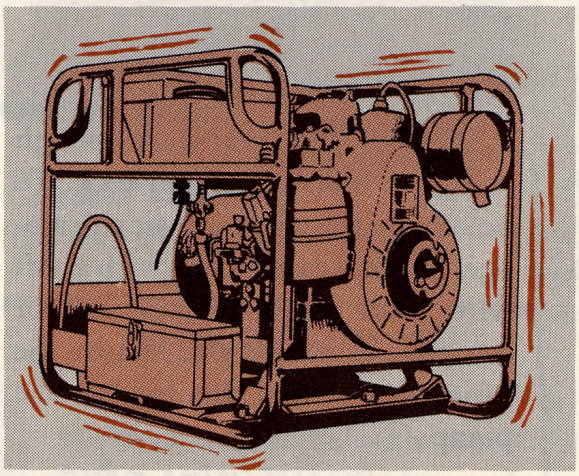
AND ON THE TD-20 ONLY—

When you pull both steering levers back—you want to ease 'em down again when the time comes. You never let 'em snap down, especially if the engine is revved up.



When you have icing conditions—you lock or block the rig for parking any way EXCEPT by locking the steering brakes. You can really tear up the peapatch trying to move out with brake bands frozen to the drums.

STOP THE SHAKES



Rhythmic vibrations may be appreciated in some circles.

But vibration of the Winpower Model G0536-1A08-1 generator causes the four fuel tank mounting screws to work loose. When this happens the fuel tank picks up the beat, begins its own version of the twist, and shears off the screws.

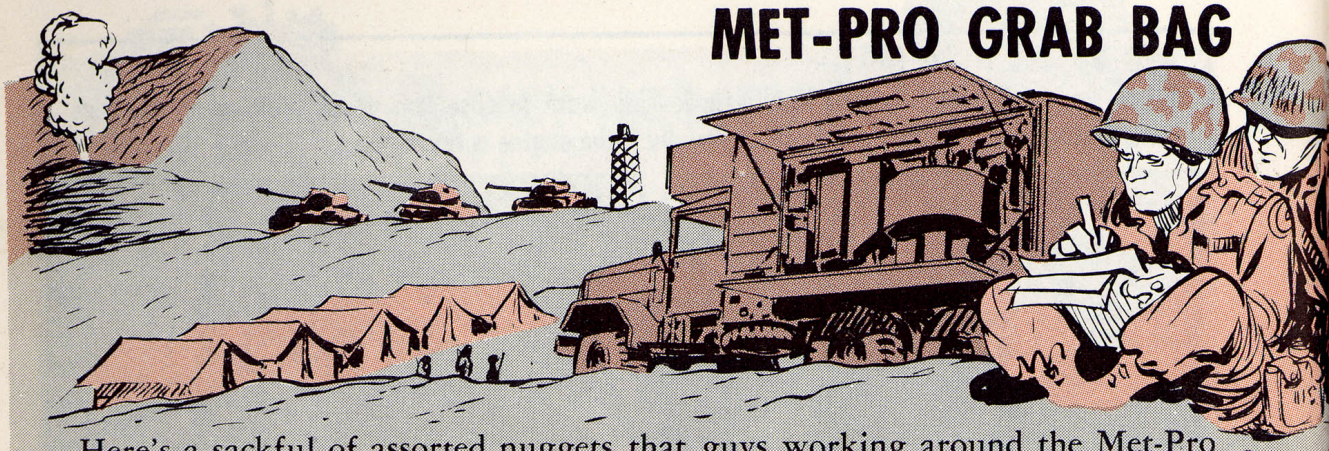
Here's the gimmick.

The fuel tank and the mounting base are drilled to take ¼-in screws. Since the No. 10-24 screws being used are smaller, it's easy for them to work loose.

You can stop the fuel tank gyrations and save yourself a lot of possible grief by replacing the No. 10-24x½-in screws with ¼-20x¾-in screws, mating nuts and washers.

You'll have to make the hole in the ground strap a mite bigger—from 3/16-in to ¼-in—to take the ¼-20 screws.

MET-PRO GRAB BAG



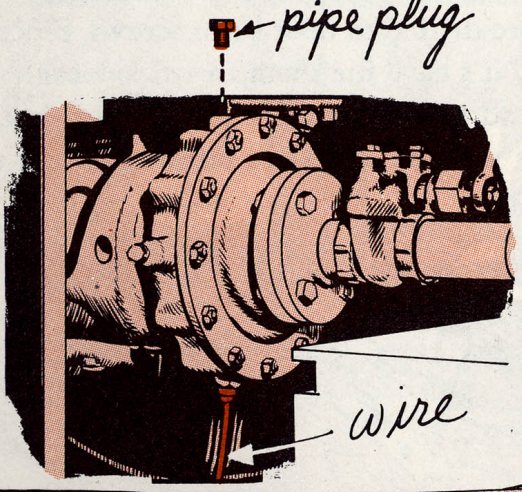
Here's a sackful of assorted nuggets that guys working around the Met-Pro 1500-GPH and 3000-GPH water purification sets have picked up.

Mostly these trouble-saving nuggets apply to both Met-Pro models of these van-mounted rigs, so the model won't be mentioned except on items where only one model needs the special attention.

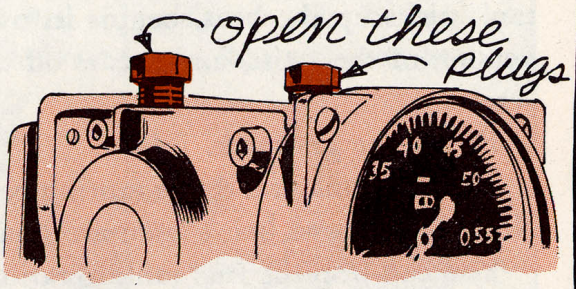
Note:

NO-DRAIN POCKETS

Filter Pumps can store enough sludge to block the drain cock. To be sure this sludge can't stop drainage, give it a careful feel with a soft wire. And to get enough air for complete drainage, you remove the pipe plug from the top of the pump.

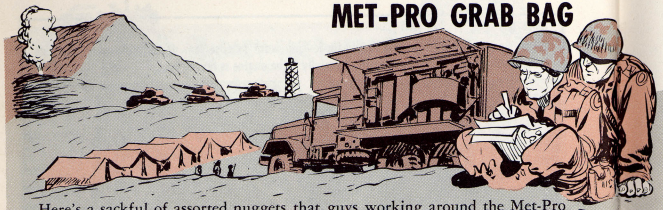


Flow Indicator lines won't drain right unless you open both vent plugs on top of the indicator unit, something like bleeding the air on starts. Water left in these lines will split 'em in freezing weather.



The Diatomite Dilution Tank outlet line won't drain unless you loosen the clamp that holds this plastic tube, and lower the loop to let it unload. After draining, you clamp the tube back in place.

MET-PRO GRAB BAG



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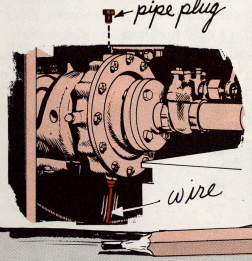

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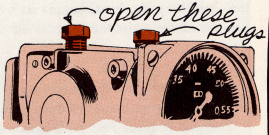

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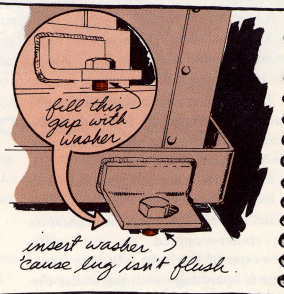
HIGH WATER LINES

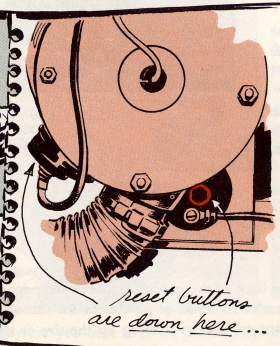
On the long, high reach from slurry feeder to filter unit, the water supply pipe gets somewhat shook by vibration when the purifier is operating. A pipe strap or two, supporting the pipe and fastened to the van ceiling by thread cutting screws with lock washers, can shackle the shock on this high line. Here's how and where you strap the line on the 1500 GPH and the 3000 GPH units.

STOWAGE BOX FRAME

On the 1500-GPH Met-Pro unit, the fastening lugs on the frame under the stowage box are not set flush with the van floor. You want to fill the gap between lug and floor by either relocating the lugs so they're flush with the bottom of the frame or by loading the cap screws with cadmium or zinc plated steel washers—like FSN 5310-227-6566 (Ord). Otherwise too much tightening on the cap screws can bend or break those lugs.

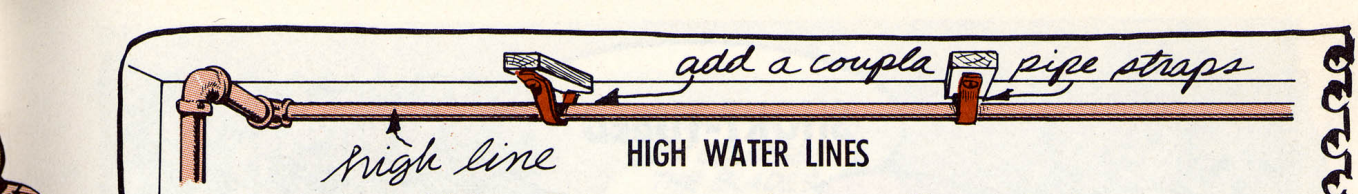


MH-OB4 PERFECTION HEATER



On those 1500-GPH Met-Pro purifiers that come with the Perfection Model MH-OB4 heater, loss of power—like when the generator quits—can trip the pair of limit switches mounted under the burner. When this happens, you have to push the reset buttons on both limit switches before the heater will start burning again.

These reset buttons are out of sight, but it's easier to find 'em than to replace the switches—or shiver while you wait for somebody to answer your "out-of-order" report on the heater.



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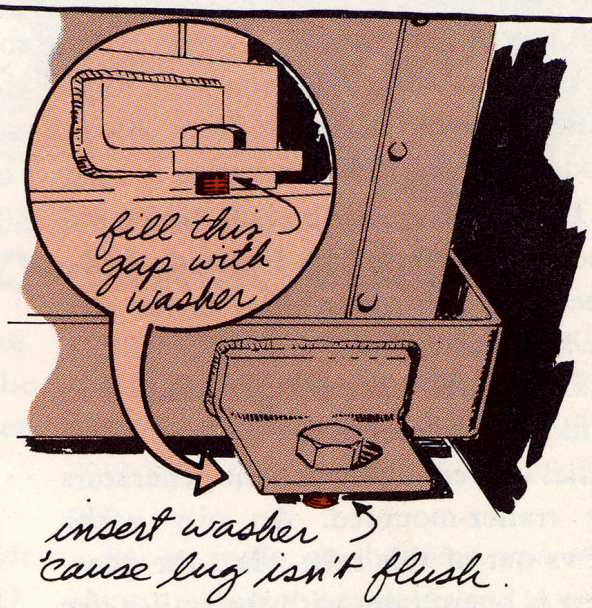

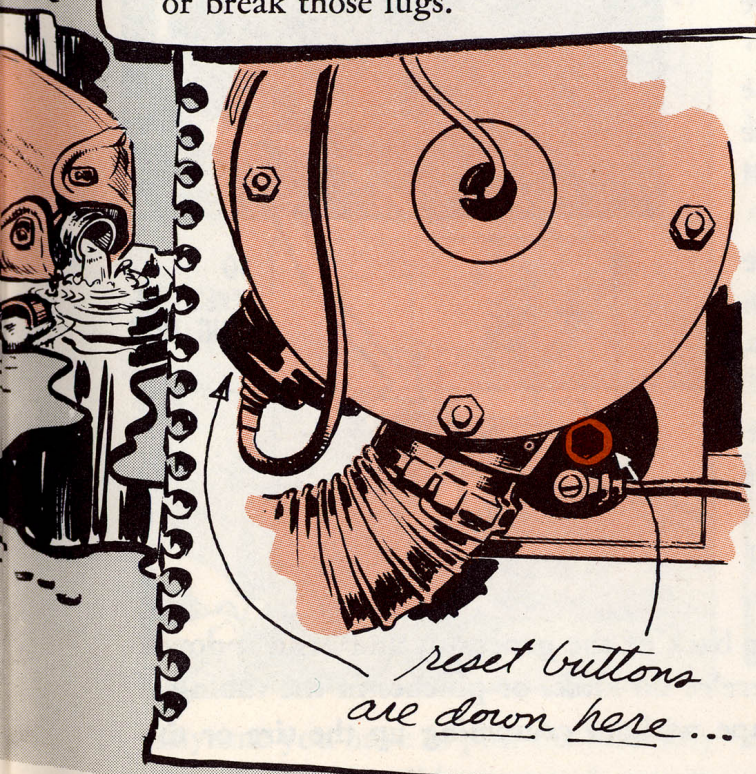

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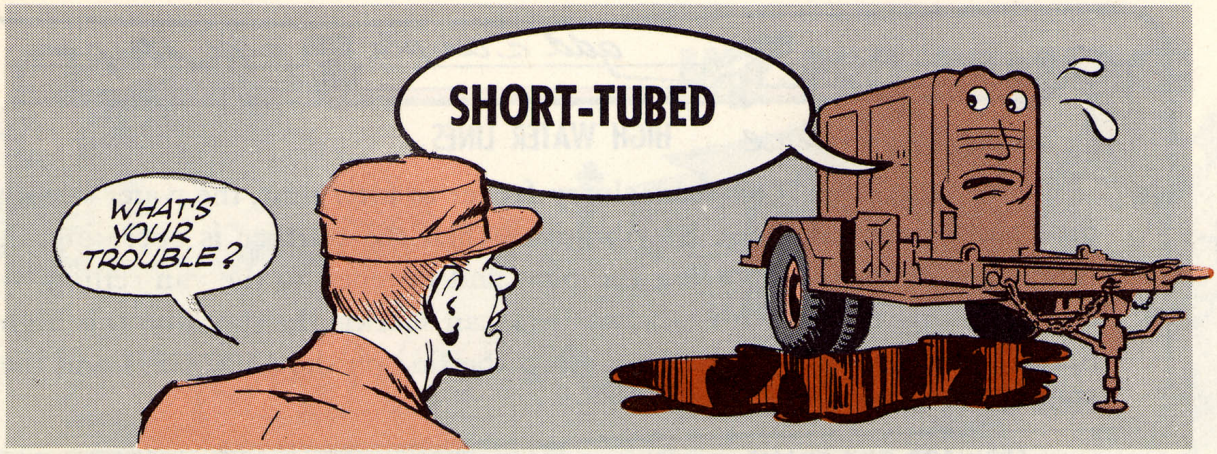


A guy likes to have plenty of breathing room.

And, that's just what you want to give the engines on your trailer-mounted Kurz & Root Alex 1 and Harnischfeger Model 400A 45 KW generators . . . plenty of breathing room.

The crankcase air box oil drain tube assembly on these rigs is short-tubed—extending only about three inches past the skid base.

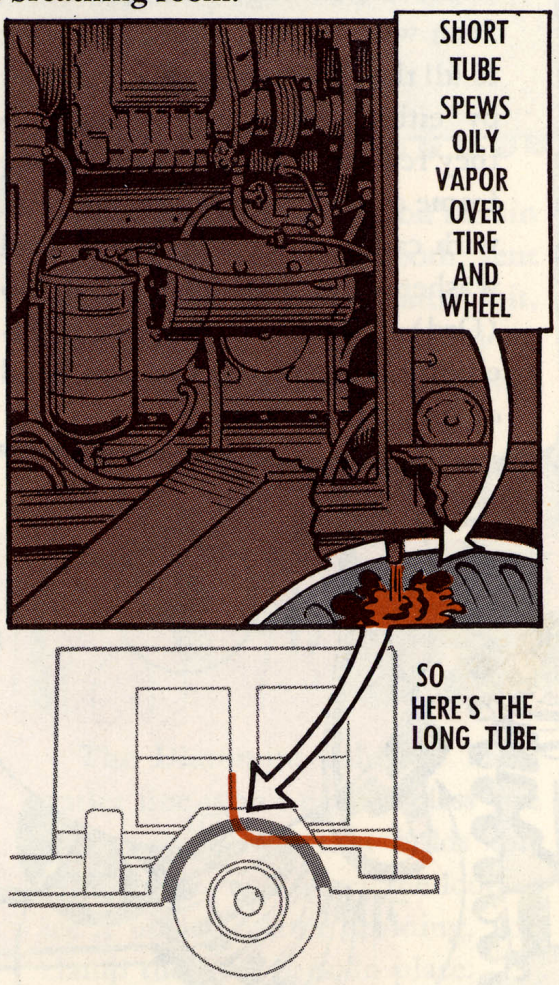
This is OK when the generator is in a fixed emplacement, but the three inches isn't enough when the generators are trailer-mounted. An oily vapor spews out of this tube when the generator is operating—with the trailer tire and wheel getting the full blast.

A longer tube will let you direct the oil away from the tires and keep the underside of the trailer from getting all gooked up.

You can put an extension on the drain tube by cutting a 40-in length from ⅜-in bulk tubing, FSN 4710-350-9889 (Eng).

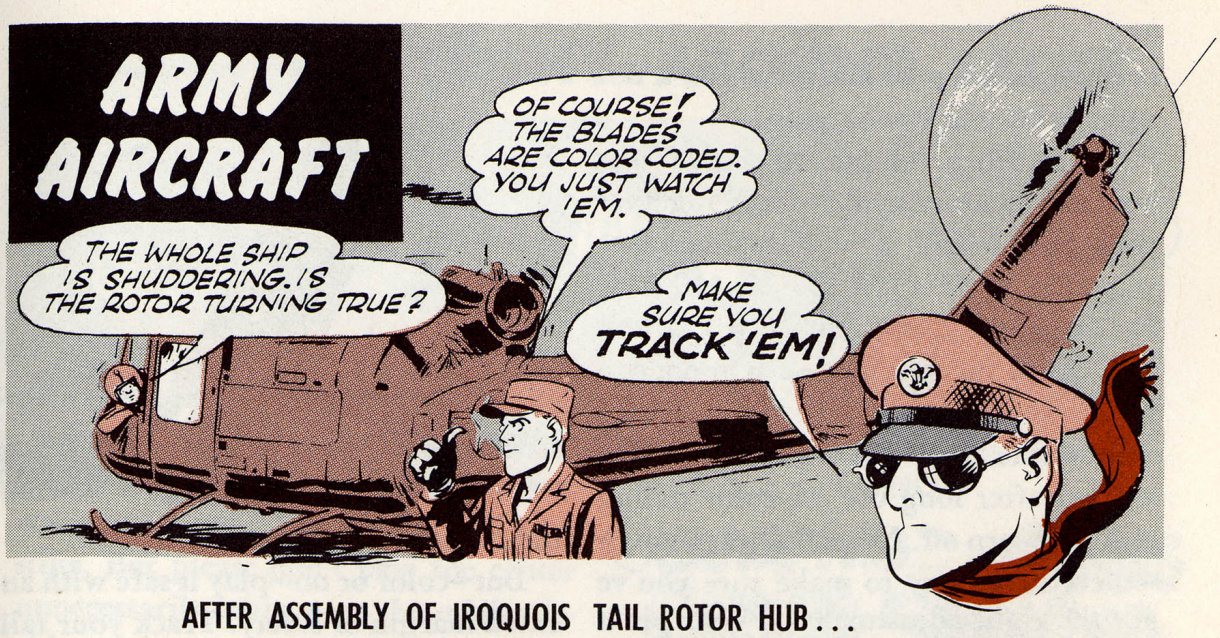
Now, just take one end of the copper tubing and slip it into the hose that runs through the generator skid.

Fasten it in place with a clamp, FSN 4730-202-7771 (Eng).



Then, run the copper tubing out the back of the generator and bend it down and away from the trailer. Be sure there're no kinks or pinches in the tubing.

This'll let the vapor and gook escape without crumming up the tire or the underside of the trailer.

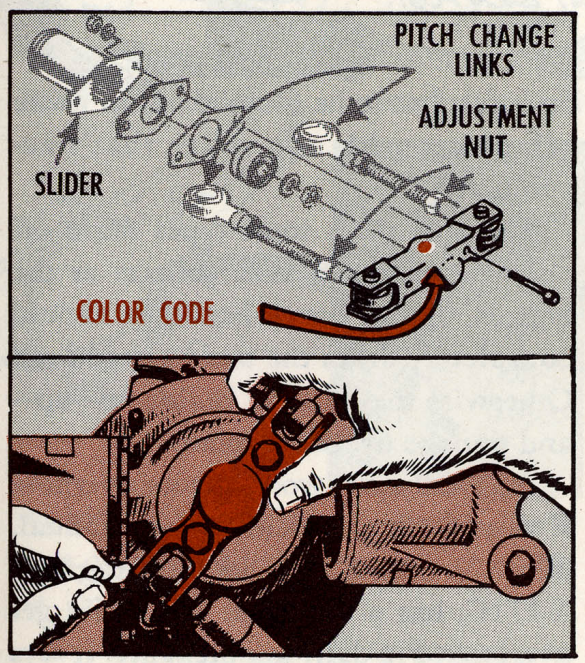


AFTER ASSEMBLY OF IROQUOIS TAIL ROTOR HUB . . .

COLOR OR NO—TRACK BLADES

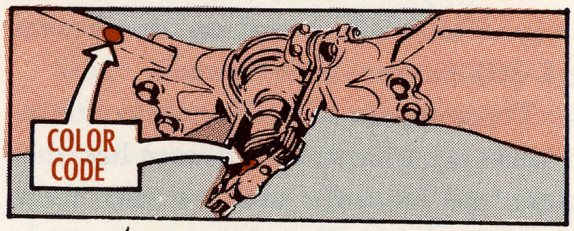
Color coding today's the big thing. Just ask any on-the-ball mech if he doesn't check his color coding when puttin' parts back on his aircraft . . . gives him a margin of safety!

Take the tail rotor hub and blade assembly on your Iroquois (HU-IA)



Anytime you have to pull the assembly apart to get the slider out and over to your support for magnaflux inspection, there's no problem in takin' the slider out. But puttin' it back and hookin' up your pitch change links could give you one.

For example, maybe some type came along and put on new links and guessed at the adjustment by comparing it with the removed links. That can throw a blade out of track real easy. After all, it only takes a half-turn on an adjustment nut to change the blade pitch . . . even a guy with 20-20 can't see a half-turn by comparing parts. And an accidental reversal of the crosshead assembly, with the links attached, can throw your tail rotor blade a mile out of track.



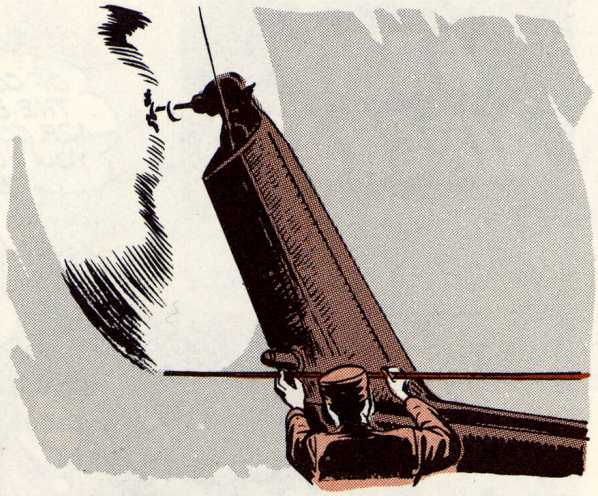
You know what a blade out of track means—a high frequency vibration that can put stress on the hub assembly, may-

P.S. MORE

be crack some part and give you a tail rotor failure in the bargain!

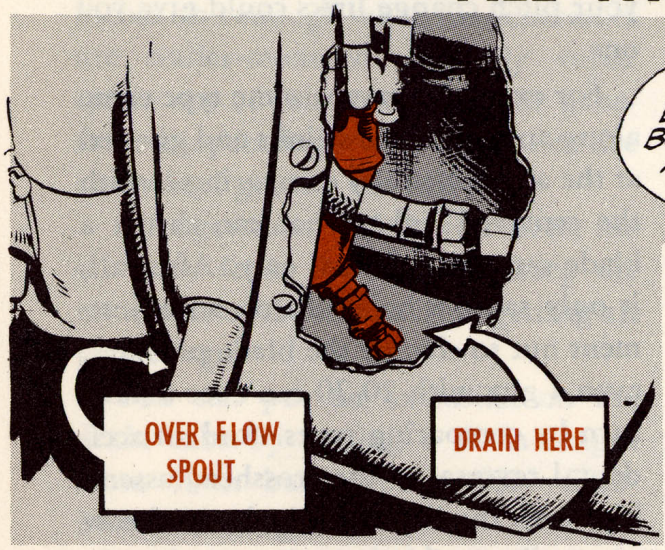
'Cause when you put the parts of the hub and blade assembly back together your best friend is your maintenance manual, TM 55-1520-207-20 (10 Mar 61). Chapter 2, Section VI, paragraph 6-5, has as the first step—a reminder to **check your color coding.**

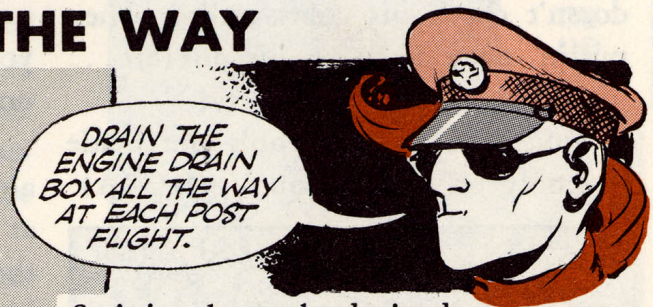
However there's always the possibility that after long use the color coding will get worn off. No real sweat though—there's one way to make sure you've got the right adjustment on your pitch change links and that's to track the blades after assembly. Then you can make any necessary adjustment to bring the blades back in track.



But—color or no—play it safe with an **extra** margin of safety. Track your tail rotor blades **every time** you work on your tail rotor assembly . . . it's good PM.

ALL THE WAY





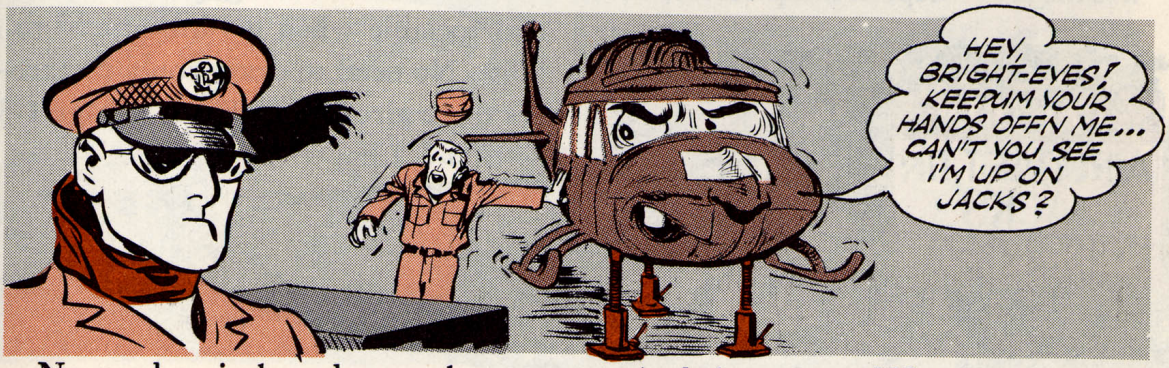
When you drain it, drain it all the way. That's the word on the Beaver (L-20) engine drain box.

The purpose of this drain box is to collect oil from the crankcase breather vent and from the exhaust side of the vacuum pump. But there's no way in which this oil can be pumped back into the oil sump as it is in other engines. So it just has to be drained out as waste oil, along with any water that's accumulated.

The trouble is some types drain off only the moisture that collects at the bottom of the box when they should **completely** drain the moisture and oil. Otherwise the oil level builds up—up—and out the overflow spout.

Normally you won't get an overflow if you follow the maintenance manual. TM 1-1L-20A-2, page 152A, paragraph 5-171C, has a note that can easily get overlooked in daily maintenance. It says that the box should be drained at each post flight (that means completely).

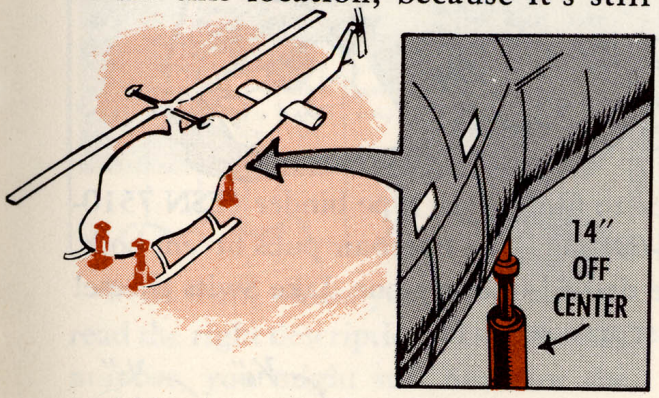
DON'T GET PUSHY—AROUND JACKS



No need to jack and run when you want to set your Iroquois (HU-1) on stilts. But please don't paw the critter unnecessarily, either—or she might decide to go temperamental on you.

No one can say an Iroquois is afraid of heights. It's just that she's not used to being off the ground with limp rotor blades. Guess you'd feel a little shaky under the circumstances, too. Right?

Part of the reason the poor bird turns into an unstable creature when she's jacked up is the location of the aft jacking pad . . . about 14 inches off center on the lefthand side. Nothing wrong with this location, because it's still



within the allowable CG limits—but it sure does **not** add to the bird's stability on jacks.

She'll behave herself as long as you leave her alone once she's up on her pedestals.

And that means NO—

And—above all—definitely NO **crawling into or on** this bird any time it's being raised, lowered or just sitting still on the jacks.

By the way, you did remember, of course, to lock the jacks . . . well, didn't you?

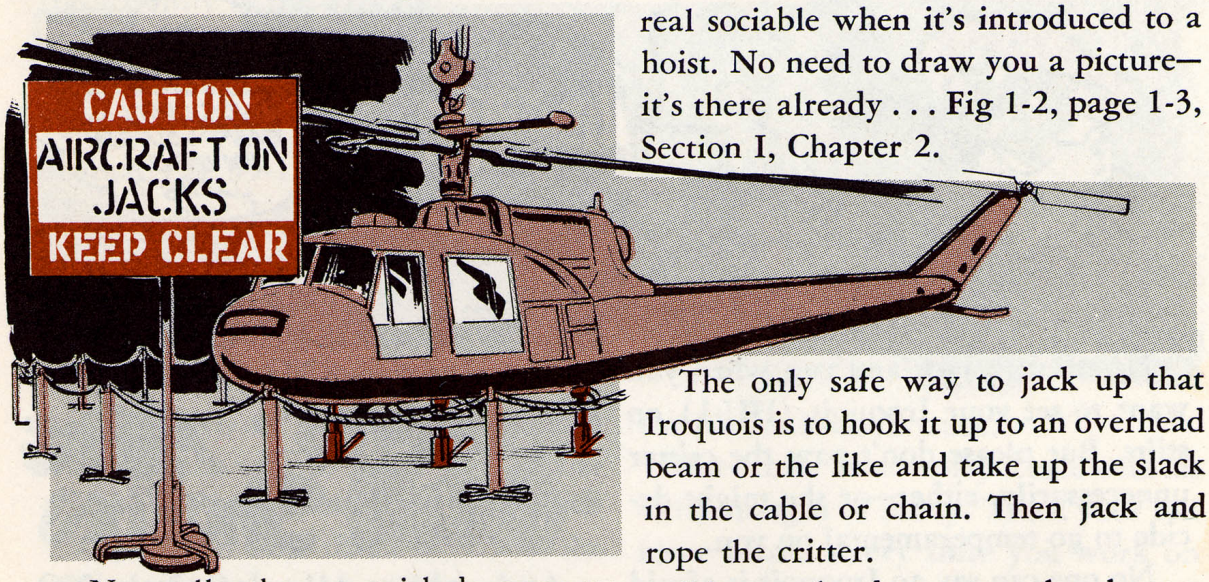
OK! OK! So you're not going to be the one to upset her equilibrium because you know better. But how 'bout the other guys in the hangar? Sure! They know better, too. Only how come one forgetful type got too friendly (he only leaned on her) and over she toppled?

The result was on very sick bird. Luckily, 'twas no "buddy" t'other side or—squash! Ever see a human press fit between a fuselage and the deck?

Since humans are more likely to molest choppers than vice versa, your best safety approach is to rope off the area around that Iroquois and post some signs where everybody will be sure to read 'em. Let everybody know your bird's suffering from jackitis,

P.S. MORE

which can be dangerous to humans unless the bird's kept in complete isolation.



Naturally, the rope trick does you no good while you're actually doing the jacking or for any maintenance chores you might have to do while the bird's jacked up. But the answer to that is a quick look at the good book . . . TM 55-1520-207-20 (10 Mar 61).

This ought to remind you that there's a main rotor hoisting nut which acts real sociable when it's introduced to a hoist. No need to draw you a picture—it's there already . . . Fig 1-2, page 1-3, Section I, Chapter 2.

The only safe way to jack up that Iroquois is to hook it up to an overhead beam or the like and take up the slack in the cable or chain. Then jack and rope the critter.

It's not the damage to the chopper that matters as much as the number of mashed maintenance types you can end up with by forgetting this hookup. So feel free to use that hoist on anybody who won't agree it belongs on the Iroquois as part of the jacking operations.

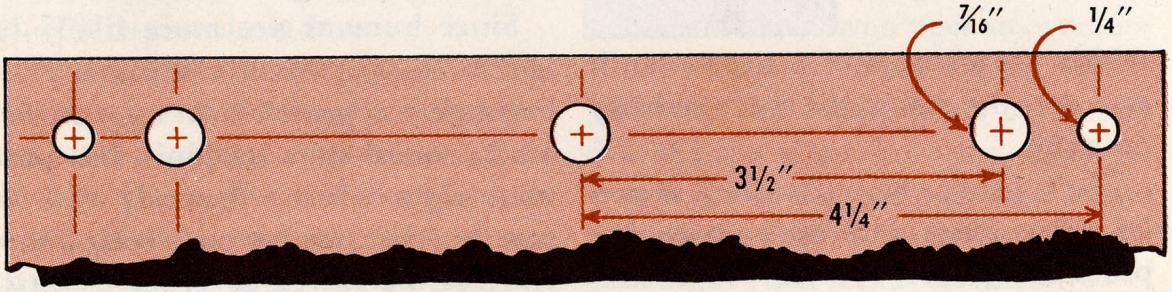
MACHINES REPUNCH 'EM NOW...

SWISS CHEESE STYLE

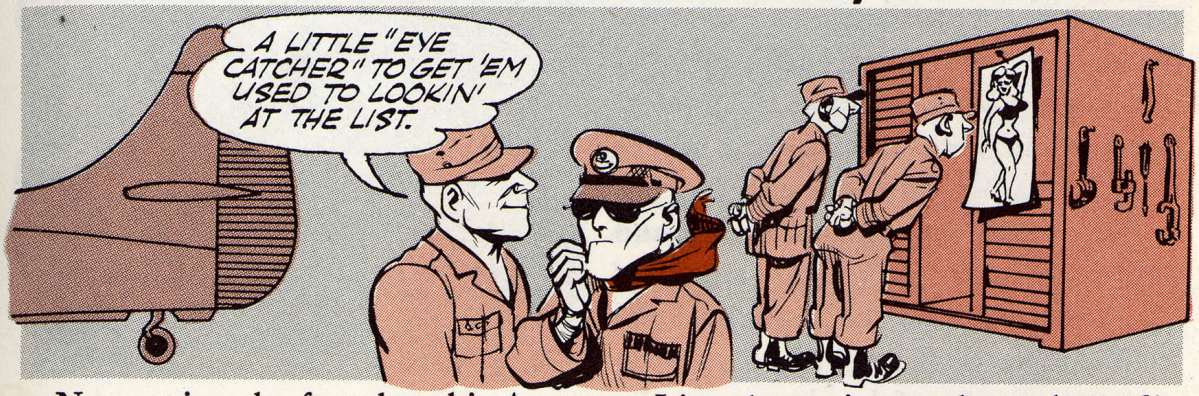
Turn in your paper punch and go back to filing. Post type binder (FSN 7510-282-4757) or loose-leaf (FSN 7510-188-6955) . . . the latest air pubs fit 'em both.

Five—count 'em—Five holes machine drilled in every one. Like Swiss cheese!

P.S. The PS 108 (page 24) deal is just an interim fix.



DISPLAY YOUR HARDWARE, PARTNER



No arguing the fact that this Army Aircraft Hardware Kit (FSN 1560-600-5617) is one of the greatest supply gimmicks ever to be forklifted into a maintenance hangar . . . unless you'd like to gripe that it sometimes takes no small amount of time locating the right piece of hardware.

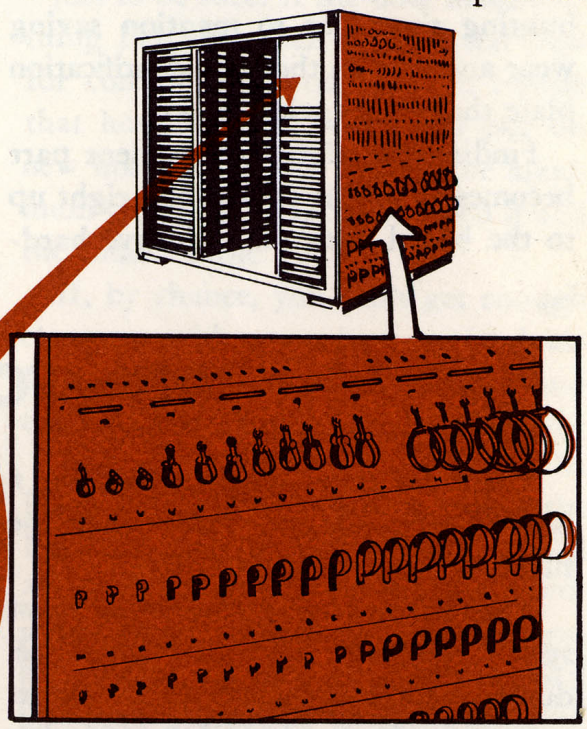
Well, you'd have a good point there, pardner. Unless you know the AN part number to start with, you usually have to hunt up and down—across and back—to find the box number of that item on the kit's identification list.

U.S. ARMY AIRCRAFT HARDWARE KIT FSN 1560-600-5617

NOUN NAME	PART NUMBER	FEDERAL STOCK NUMBER	BOX NO.	NOUN NAME	PART NUMBER	FEDERAL STOCK NUMBER	BOX NO.	NOUN NAME	PART NUMBER
BOLT	AN 3H4A		89						

Even then, unless you know how to read the right description out of the AN number, you might still head for the wrong box first time around. The difference in the size of the boxes and the size of the hardware items makes it kind of hard to list both the part and box numbers in any sort of consecutive numerical order.

It's a lot easier on the eyeballs displaying the hardware right out in front of the store on a big board. You can either fasten the board right to the CONEX container or stand it up on its own feet nearby . . . depending on space available.



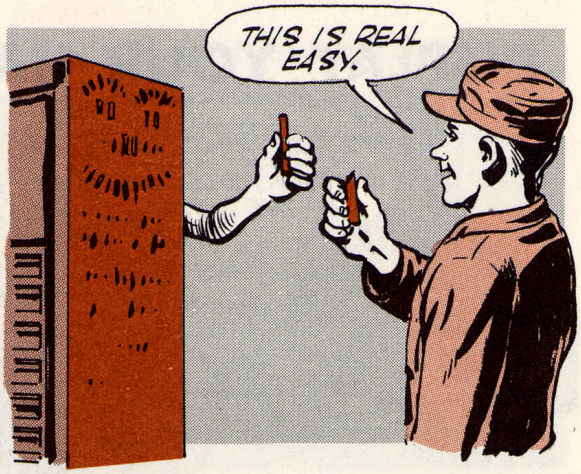
Just pull out one each of every size for each different type of hardware you're stocking in the kit—and wire 'em right to the board. Keep each type together in sized order. Then stick the P/N, or FSN, and box number under each display item.

Now since these kits are only distributed to support outfits for joint use by both 3rd and 2nd echelon maintenance types, one board does the job real sweet when both echelons are in the same hangar—or close to each other.

But where the organizational and field maintenance hangars are separated by a fair distance, the organizational maintenance units might have to keep a small supply of hardware on the premises. This is where a duplicate display board in each 2nd echelon maintenance hangar comes in real handy.

Using a display board cuts down the hunting time, not to mention saving wear and tear on the bolt identification plate that comes with the kit.

Finding the right replacement part becomes as simple as walking right up to the board with the defective hardware and matching it up with the identical display item.



A quick glance below the bolt, clamp, cotter pin, etc., you're looking at . . . and you've got the box number. Step inside. Take one, two—as many as you need—and you're back to work quicker'n you can tell somebody about it.

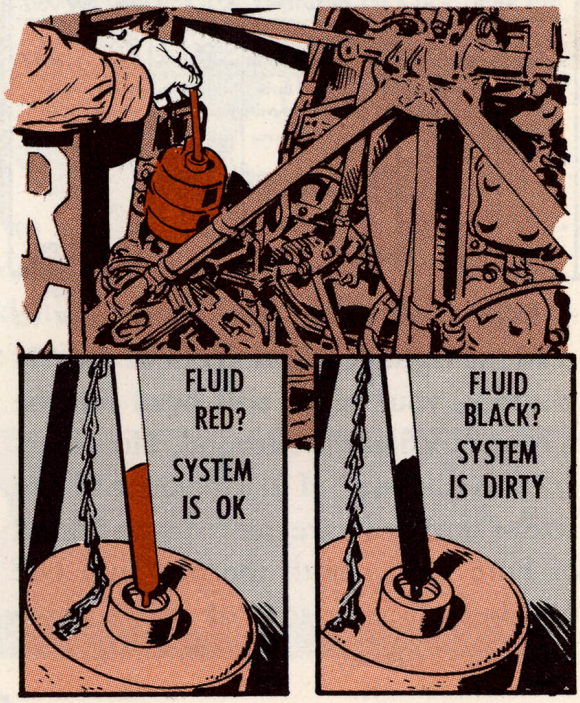
If you can see it, you can find it.

RED—FOR SURE

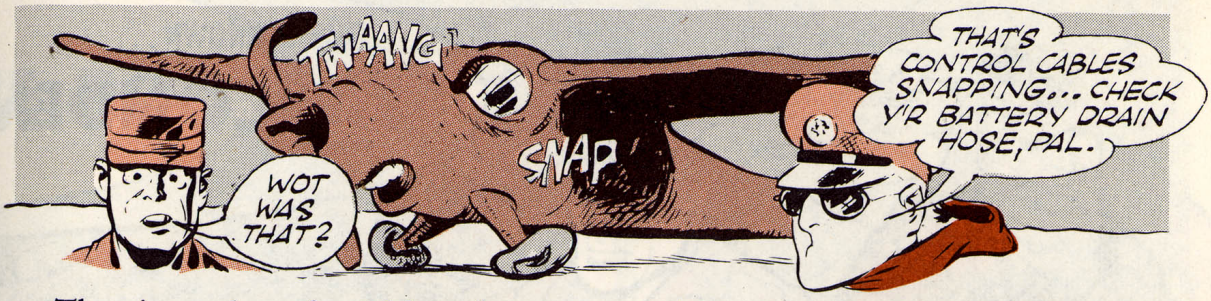
There are times when it pays for a bird to be in the red—rather than the black.

Take the hydraulic fluid in the boost system of a Sioux (H-13). If you notice, during your daily check of the reservoir, that the fluid, MIL-0-5606, has turned black, you've got a dirty system.

This can be caused by engine oil mixed in with the hydraulic oil . . . which means your bird could have a plugged vent line or an engine oil seal leak. TM 55-1520-204-20 (27 Sep 60), Chapter 2, Section VII, will clue you on how to get your hydraulic fluid back where it belongs—in the red.



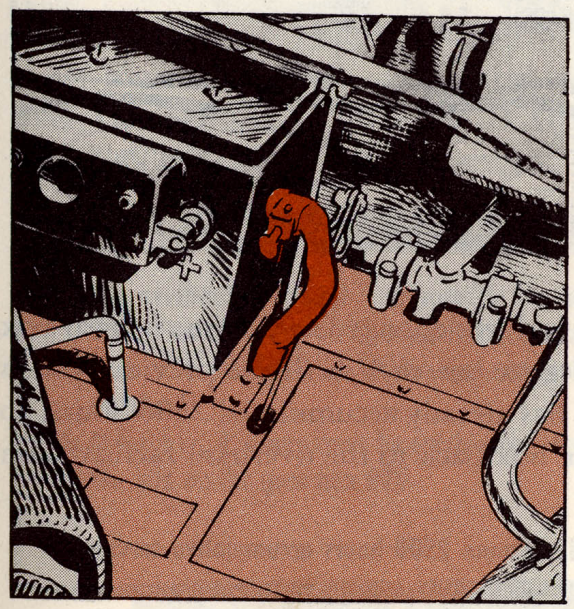
BATTERY JUICE ON THE LOOSE, OR... CHECK YOUR CABLE CLEARANCE



There're only a few things battery acid won't feed on . . . and a Bird Dog (L-19) rudder cable is not one of 'em.

Not too long ago, according to one teller of hairy tales, a Bird Dog was being taxied to a tiedown area. All of a sudden the rudder cable snapped an inch-and-a-half from the right rudder pedal. Guess what! The battery drain hose was chafed clear through by the cable, allowing the battery acid and fumes to go to work. All that was left was a few strands of cable. No damage to the bird, but it was a close shave! Suppose it had happened on take off or landing?

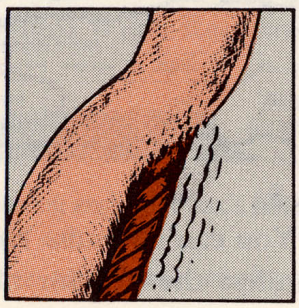
The problem is that a weary battery hose can get out of shape, what with the battery coming in for a sizeable share of maintenance and the hose gettin' disconnected and connected every so often. So it starts to sag into the rudder cable, which rubs away at the drain hose on your bird until the chafing wears out the hose.

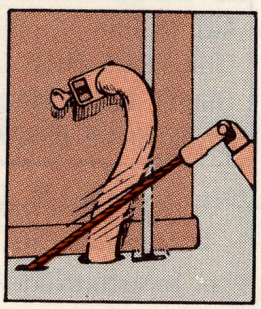


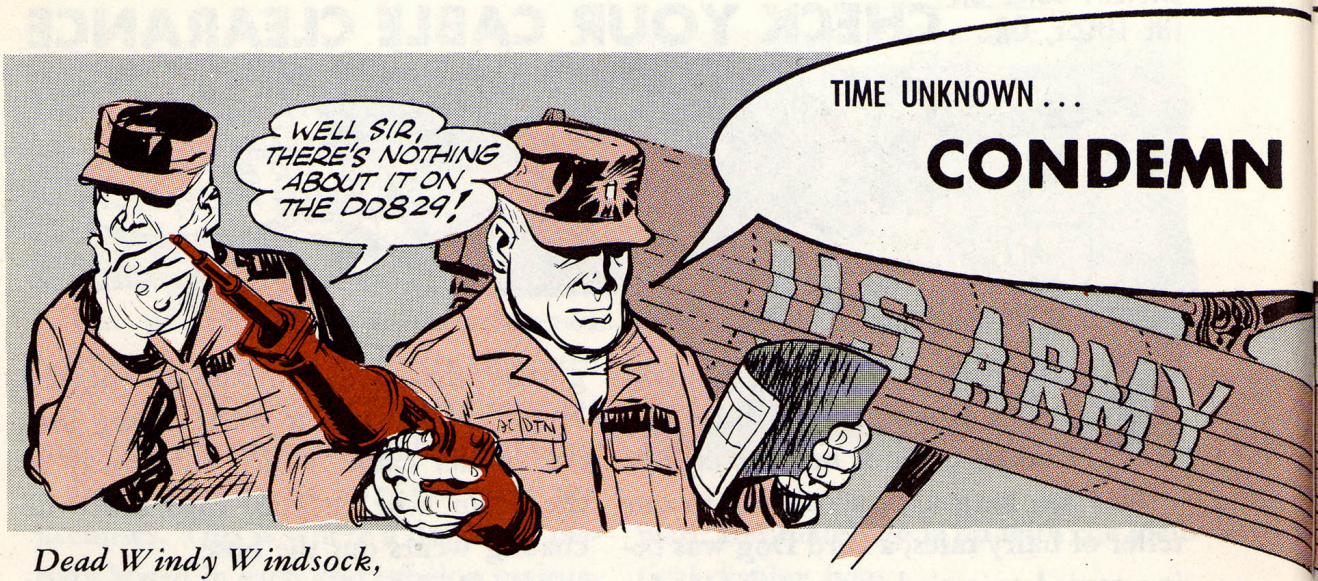
Your best bet is to give your hose and rudder cable the big eye for clearance —just to be sure. If the hose looks anything like this, then it's still too close for comfort and you want to replace that hose, pronto. When you put the new hose in, be sure you get the maximum clearance possible between it and the rudder cable.

If, by chance, you can't get enough clearance with a new hose, no jawbone fixes, please—like wire wrapped around the hose and battery case, for example.

Instead, fill out a UR or EIR (DA Form 2407) if your unit is using the New Equipment Record form. Send it along to Transportation Materiel Command, St. Louis. That way you get the engineers involved; they're the ones who can see to it that the battery drain hose is either doing its job... with clearance to spare... or has to be modified.







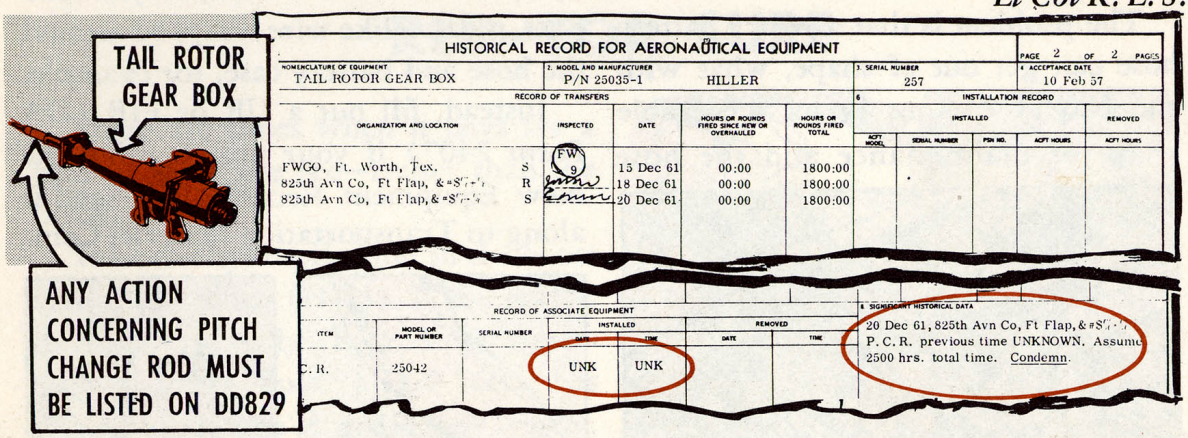
Dead Windy Windsock,

Section VI of TM 1-1H-23C-6 requires that the tail rotor pitch change rod assembly be condemned and replaced every 2500 hours.

When our replacement tail rotor gear boxes, which have to be overhauled and zero timed at 900 hours, are received from the overhaul facility, there's no indication on the DD Form 829 (Historical Record for Aeronautical Equipment) that the rod was changed—or left in the box as serviceable. As a result we have no way of knowing how many hours each pitch change rod has on it, so we can't tell when it should be changed.

Should we assume the rod was changed at time of overhaul when the 829 indicated UNKNOWN in the previous time column?

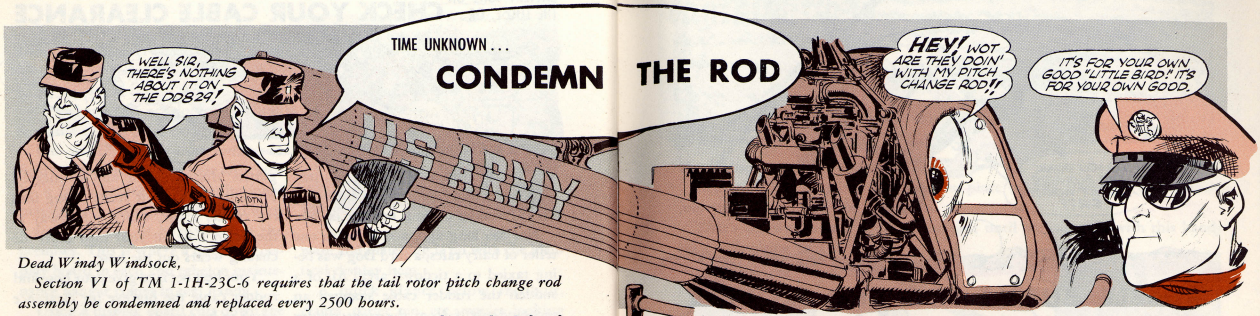
Lt Col R. L. S.



Dear Colonel R. L. S.,

Better not, Sir. You can't assume any rod was changed at the time its gear box was overhauled—unless the 829 for the gear box says so. If the previous time's not known, it's safer assuming that rod has already accumulated 2500 hours. So you have no choice but to ship that gear box back to the overhaul facility with the following 829 note:

"P.C.R. (pitch change rod) previous time UNKNOWN. Assume 2500 hours accumulative service time. Condemn."



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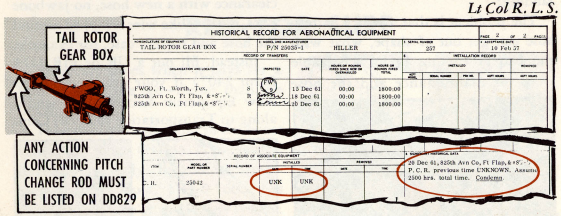

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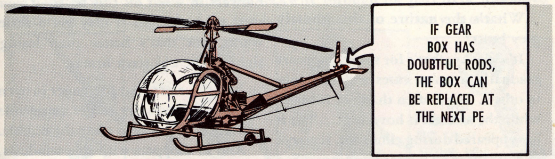
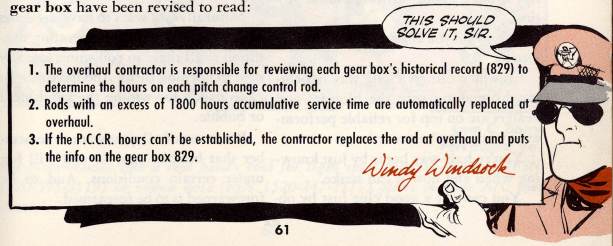
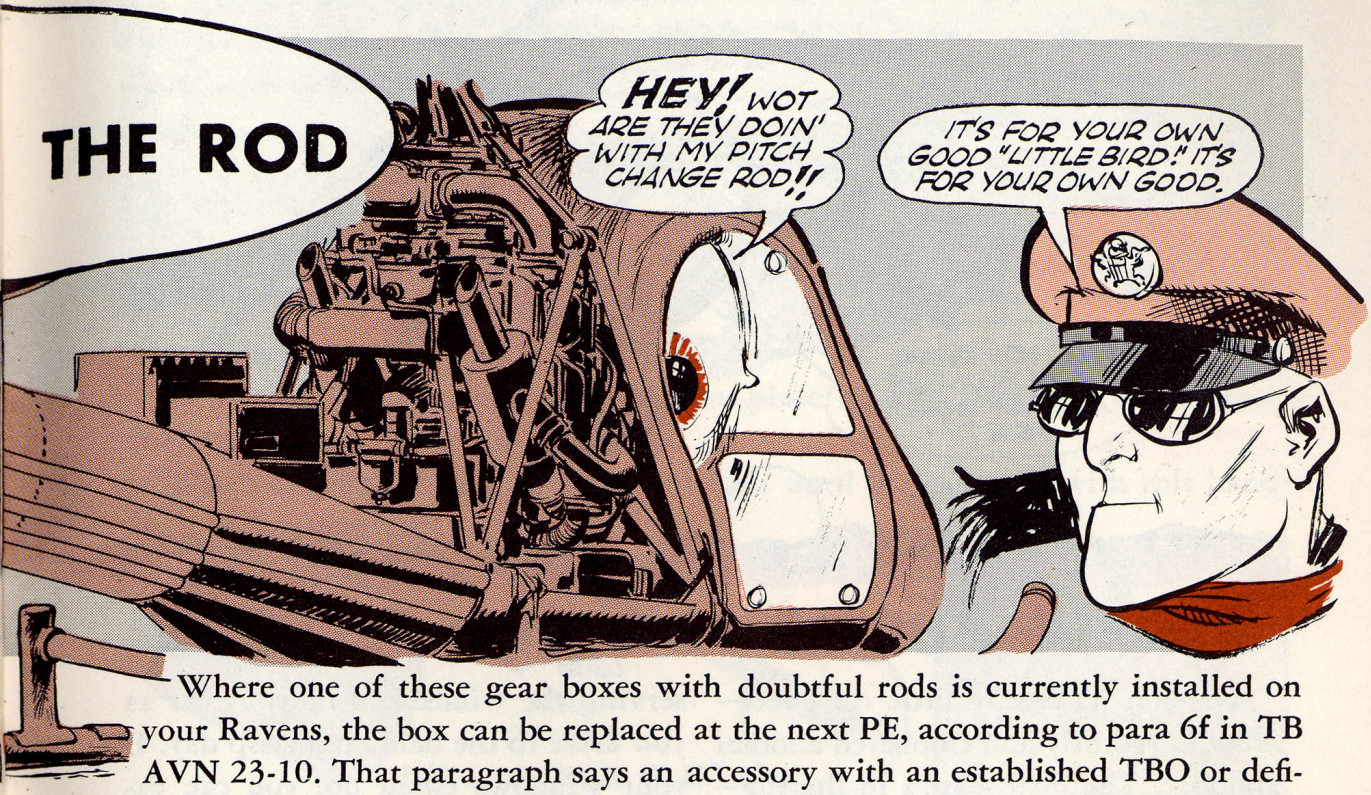
Where one of these gear boxes with doubtful rods is currently installed on your Ravens, the box can be replaced at the next PE, according to para 6f in TB AVN 23-10. That paragraph says an accessory with an established TBO or definite fatigue life can be replaced at the next PE if its operating time can't be determined accurately. Since the rod is a subassembly of the gear box accessory and has a definite fatigue life—no arguments.



Of course everybody realizes this kind of costly maintenance can't go on forever, Colonel. So that's why the **TC Overhaul Work Requirements on tail rotor gear box** have been revised to read:





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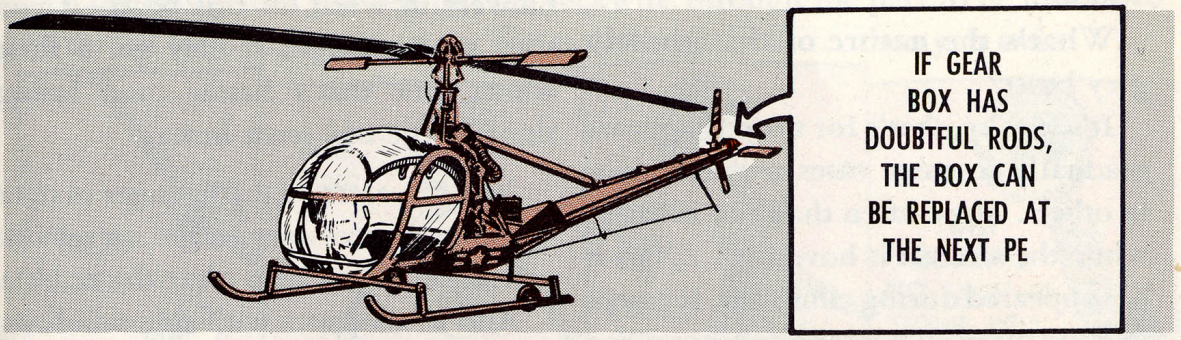

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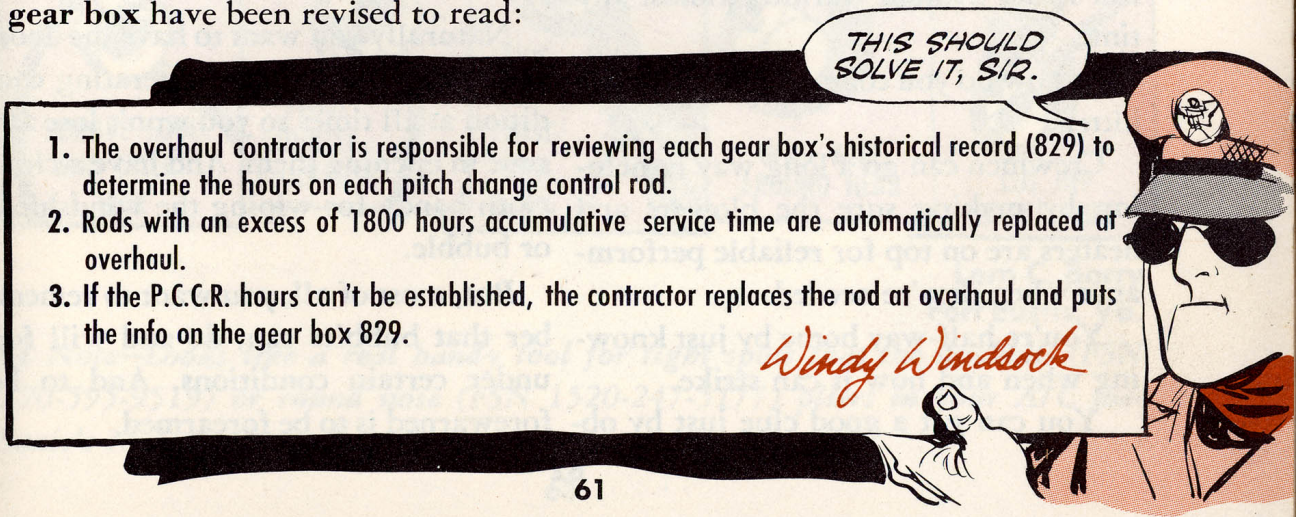
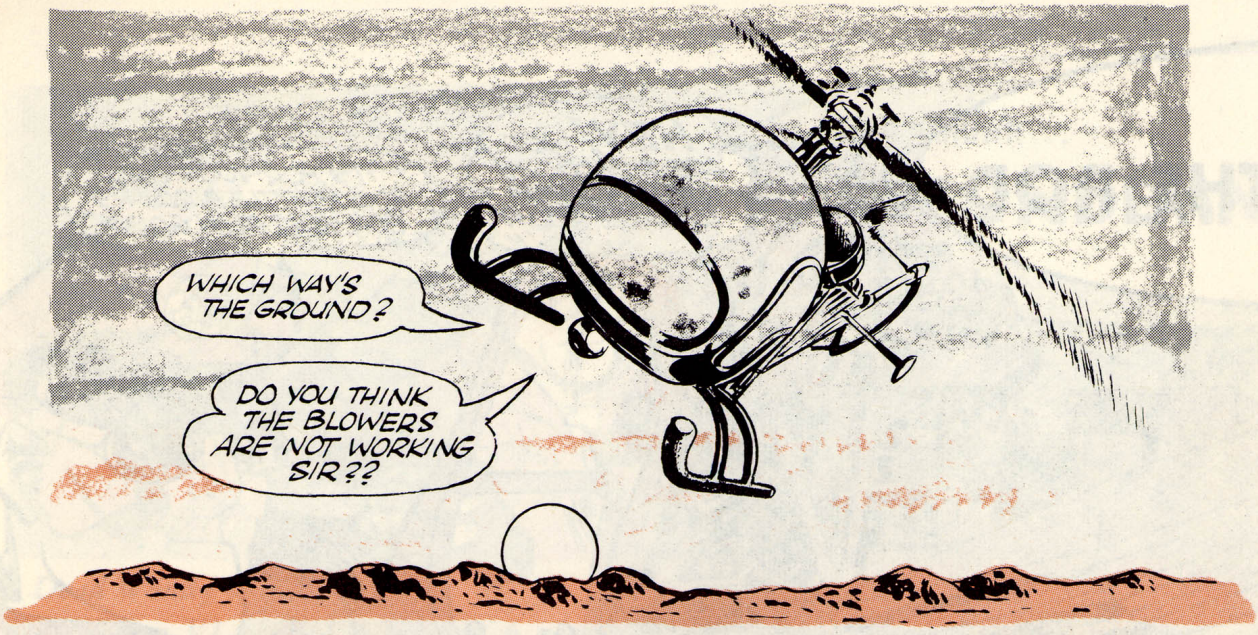




BUBBLE, BUBBLE—FOG AND TROUBLE

Fog—on its creepy little cat's feet—crept in recently and clobbered another chopper. The bird wasn't in the fog—the fog formed in the bubble. The pilot lost all outside reference . . . and swoosh!

What's the nature of this ghostly grey beast?

It's sneaky, that's for sure. It appears gradually in some cases and suddenly in others. More often than not it comes while the aircraft is hovering . . . but it has appeared during climb out. It creeps in more often on winter mornings when high humidity conditions exist—but it can strike without warning almost any time.

So how do you contend with this cool kitten?

Crewmen can go a long way in helping by making sure the blowers and heaters are on top for reliable performance when they're needed.

You're half-way home by just knowing when and how it can strike.

You can get a good clue just by observing the windshield of your car as you drive to the field on a crisp day. If your windows cloud up, you can expect some condensation upstairs, too.

You can use the cabin heater and blowers to ward off this beast—if you start soon enough. It may get a little warm, but that's better than losing sight of the old terra firma.

You can alert your passenger to open the door if necessary to get an outside reference and to help clear the bubble.

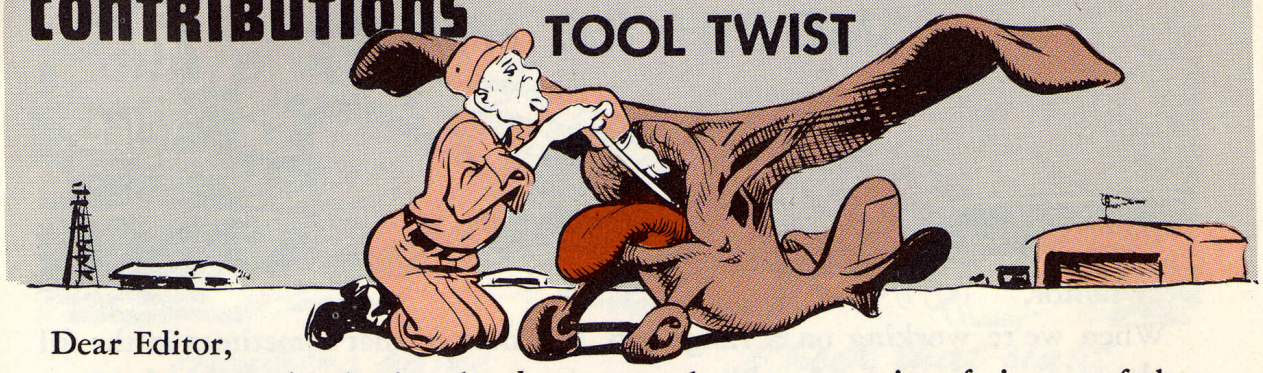
And in choppers with side windows, you can always open one or more when fogging is likely to strike.

Naturally you want to have the doors and windows in perfect operating condition at all times so you won't lose any time in opening them. And have a clean cloth handy for wiping the windshield or bubble.

But, most of all, you want to remember that bubbles can, do and will fog under certain conditions. And to be forewarned is to be forearmed.

CONTRIBUTIONS

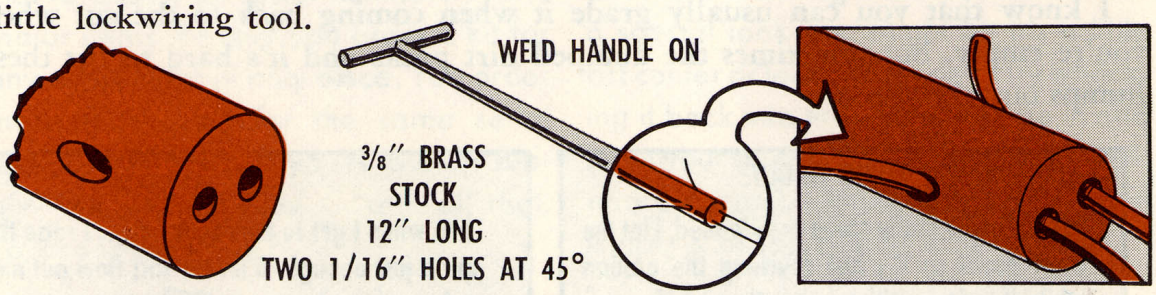
TOOL TWIST



Dear Editor,

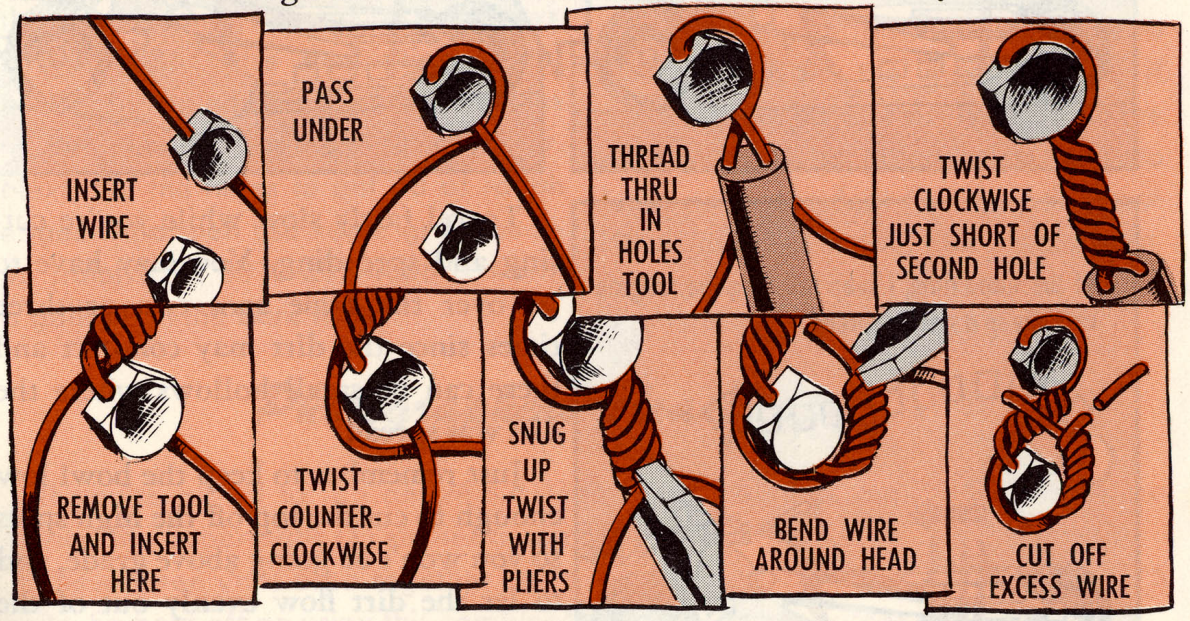
Replacing lock wire in a hard-to-get-at place on any aircraft is one of those jobs where you could use a Houdini.

That's the way it used to be at our post until we came up with this handy little lockwiring tool.



The tool is made of 3/8-in brass stock, 12 inches long. On one end you weld a handle. On the other end you drill two 1/16-in holes at a 45-degree angle.

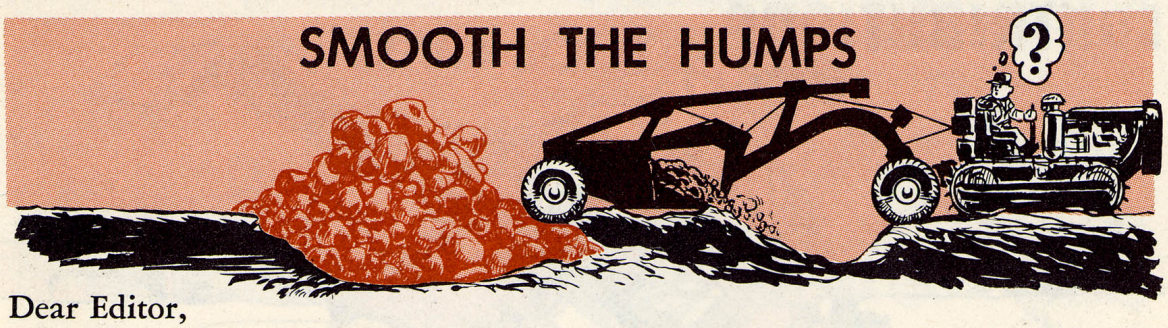
To use this T-tool you just put the lockwire through the part to be lockwired and thread it through each of the two holes in the tool . . . then you twist!



Lorn C. Barry
Fort Eustis, Va.

(Ed Note—Looks like a real handy tool for tight spots that the duckbill (FSN 5120-595-9519) or round nose (FSN 1520-247-5177) pliers in your A/C mechanic's tool won't reach.)

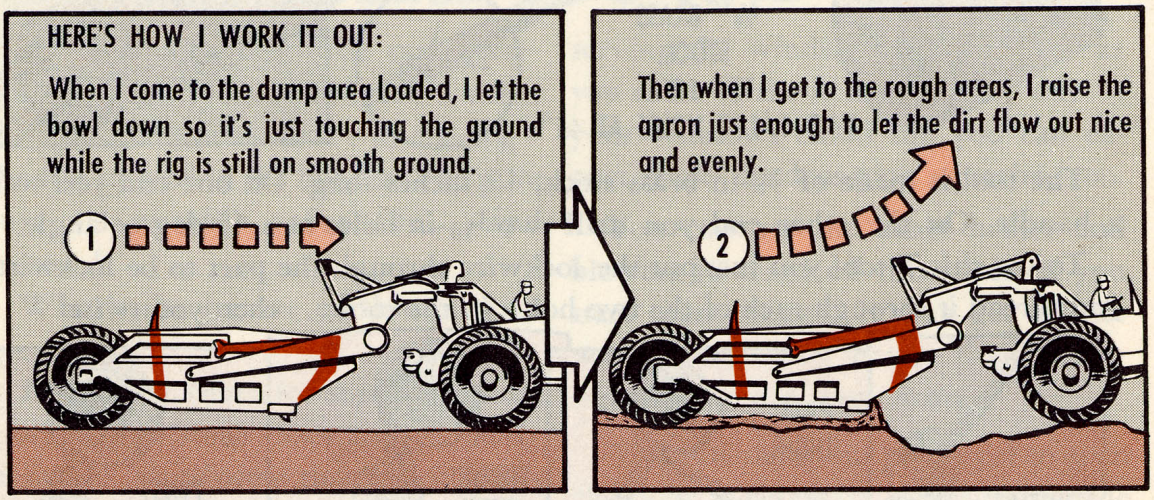
SMOOTH THE HUMPS

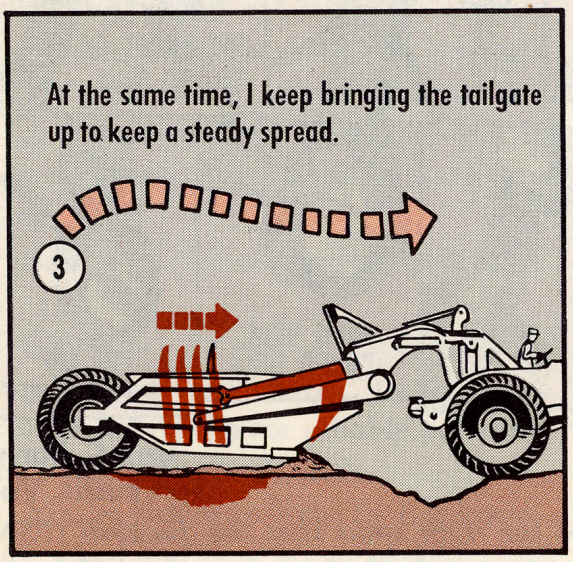


Dear Editor,

When we're working on a range job, I've noticed that sometimes in the fill or dumping areas, the ground'll get rough or wavy with a hump and then a trough. This is usually the result of dumping while traveling too fast. Once this starts, each load that follows carries the roughness and the humps further along.

I know that you can usually grade it when coming back to the cut when you're empty, but sometimes the dumped dirt packs and it's hard to cut these humps out.



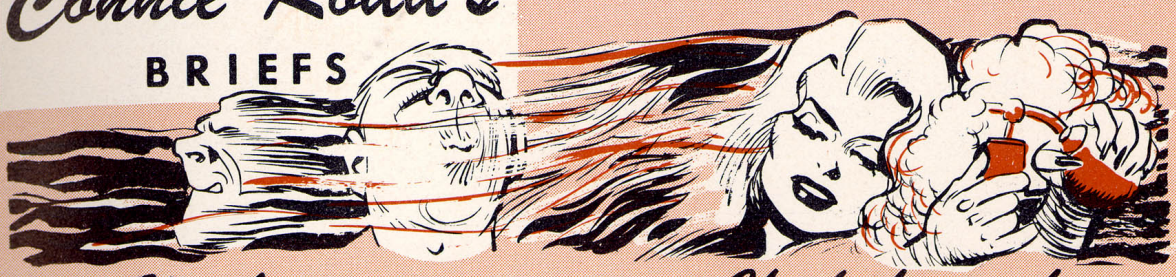


Travel fairly slow while you're cutting and spreading. You may have to go over the same spot two or three times since the dirt may compact and there can be small hollows where the dirt was spread.

Just remember to keep the bowl low enough to cut the top off the high spots so you won't be going above grade, and to let the dirt flow evenly out of the bowl to fill the rough spots.

SFC R. G.
Ft Lewis, Washington

Connie Rodd's BRIEFS



Numbers game

When it comes to ordering MWO kits that're issued by serial numbers of the major items, be sure you order a kit for any serial number only **once**. You order more than once for the same serial numbered item and you'll foul up supply—but good. Delay . . . and all that. So, order once. OK?

Ream 'em

If you're having troubles trying to line up all the holes when you go to mount the pulse forming network on your Hawk AN/MPQ-35 pulse acquisition radar, try this for an answer. Get the six holes in the network reamed 1/8-in larger. Next, file the holes to get rid of rough edges. And then use some gray touch-up paint (FSN 8010-285-4868 is worth a gallon) on the bare metal.

Check that sight

Losing your touch on the firing range? Give the front sight on your M14 rifle a special look-see. Might be it's a little off center or loose. If so, don't try whacking it back into line. Turn the rifle in and have your outfit relay it back to your Ordnance support—'cause getting it back in shape is strictly a third echelon job.

Your best bet

Until they become authorized spare parts . . . your support unit will have to buy them from the manufacturer, if you've got to have 'em. That's about the only way you're going to be able to latch on to the feet that go with your Hawk launcher test set and missile simulator case.

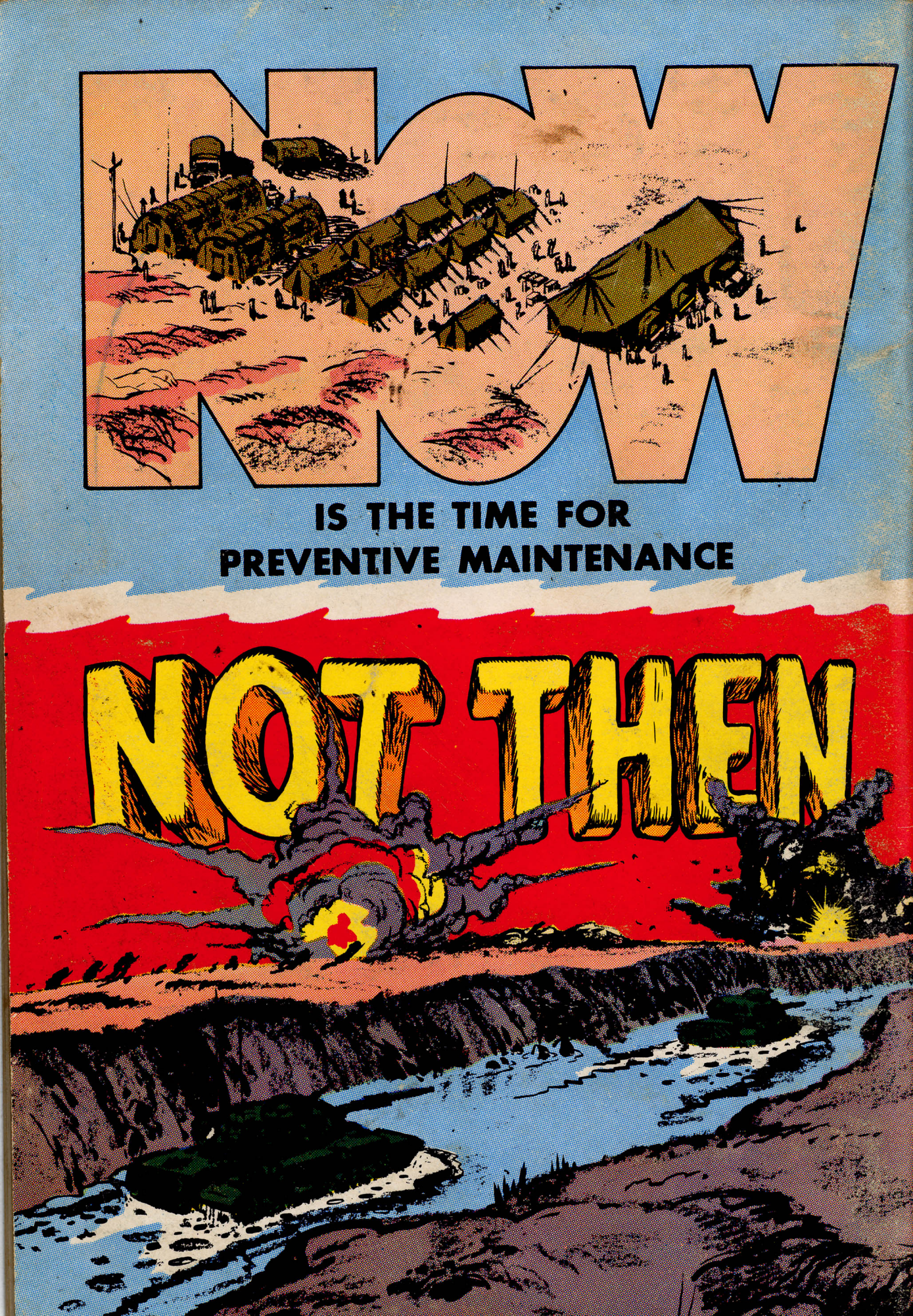
Photographers please copy . . .

If you're all set to fire an LM-33 (1) flash unit coupled to a PH-47( ) camera having the Supermatic (X) shutter assembly . . . DON'T!

These three units used together can give you the shock of your life—up to 175 volts. So hold off on using this combination until you get further word.

This warning applies only to this combination. If you can substitute any of the units, you've got it made. Just be sure you're right before you push that button. It could be the one marked PANIC.

Would You Stake Your Life on the Condition of Your Equipment?


NOW
IS THE TIME FOR
PREVENTIVE MAINTENANCE
NOT THEN